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3D Artist

02

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CINEMA 4D Mix light sources in a magical render

3ds Max Create a steam-powered giant German robot!

Maya Model, sculpt and render an urban car scene

Softimage 7.5 Latest version reviewed

ESCAPE STUDIOS
Behind the scenes with the top trainers

• Feature
Stereo 3D is here
Monsters vs. Aliens technology revealed

• Step-by-step tutorial
Sculpting with Maya
Create *Fast & Furious*-style cars

• Your questions answered!
Compositing
Add 3D to scenes realistically

Plus: Production focus on a Disney-style animated short film with Studio Lampion

Reviews: Gnomon video training, Poser Pro, Softimage 7.5, Genetica Viewer 3.0

inside

3D models worth $179
Safari pack and a car model
Gnomon video tutorial
Character animation lesson

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Talented artists share their techniques for creating amazing 3D images

• Interview
GRAND DESIGNS
Top architectural visualisation agency reveals all

• Step-by-step tutorial
Matte painting
Create a post-apocalyptic city scene in a matte style

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It's a jungle out there. Swing through it

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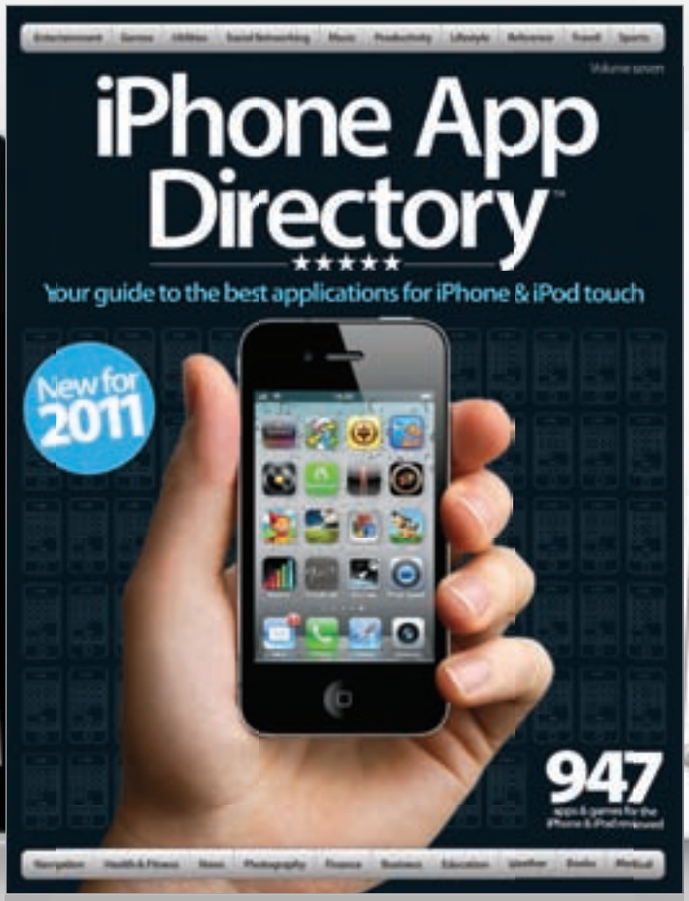

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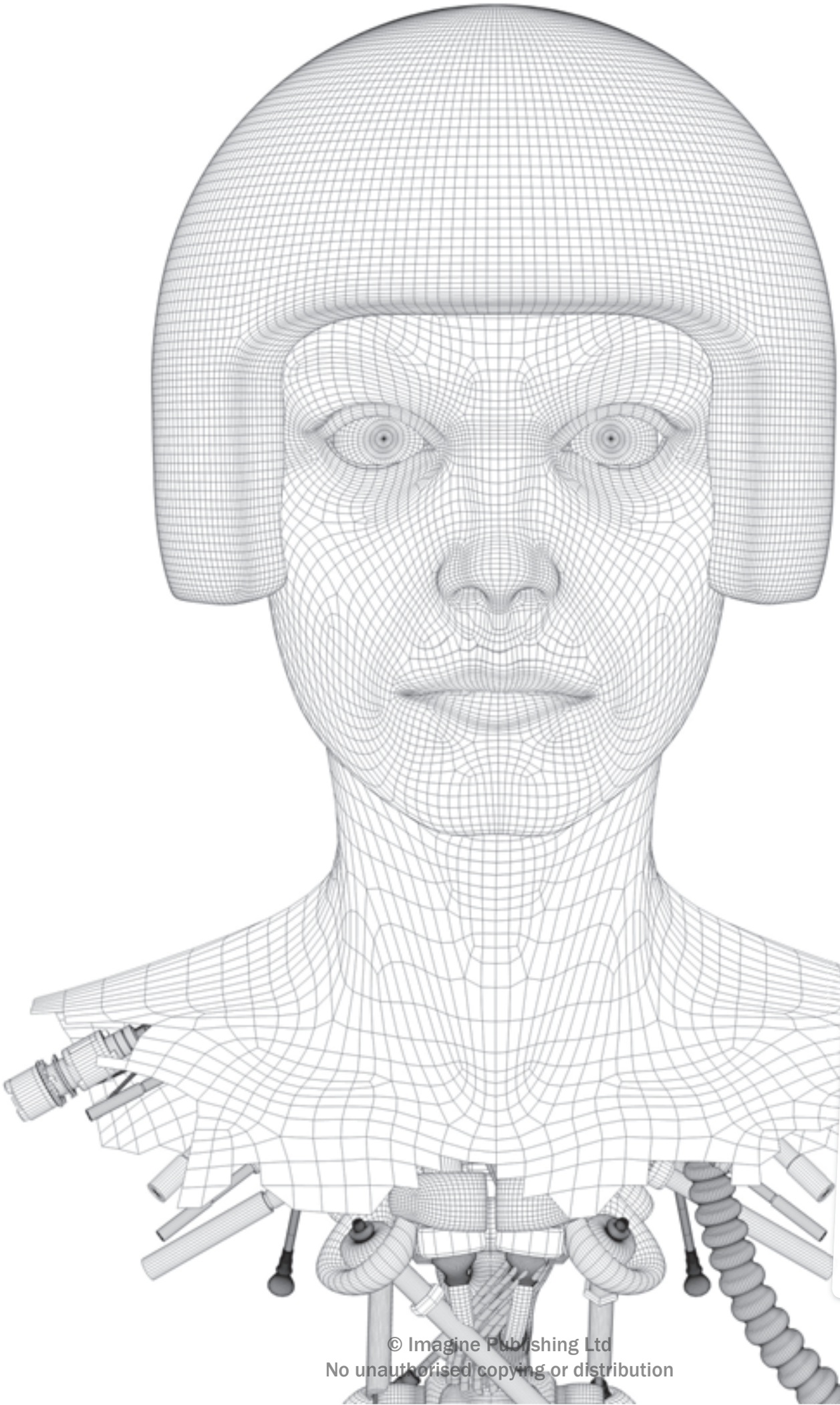

Benedict Campbell

Personal portfolio site
www.benedict1.com
Country UK
Software used CINEMA 4D, Photoshop

Cover artist

If you want a stark vision of the future, then go no further than this compelling image from Benedict Campbell. It's a 3D rendered model, but the eyes are human and have been grafted on using Photoshop.

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Welcome

to the magazine and 116 pages of 3D goodness

Every issue you can count on...

1. **116 pages of creative inspiration**
2. Behind-the-scenes guides to images and artwork
3. **A CD packed full of creative goodness**
4. Interviews with inspirational artists
5. **Tips for studying 3D or getting work in the industry**
6. The chance to see your art in the mag!

How time flies, unless you're rendering a texture-heavy scene with a dozen different lighting schemes. Yes, no sooner than issue 1 was out the door and making the newsagents' shelves groan under the weight of the fabulous 3D contained within, we're on to issue 2 already. Expect the same mix of jaw-dropping imagery that you normally have to buy a coffee-table book to see, expert tutorials, industry features and interviews. Don't forget the Workspace area too, where you get the lowdown on behind-the-scenes training, top jobs and university courses. Oh, and there's the disc as well – enjoy!

Duncan Evans, Editor

This issue's team of expert artists...

Mark Bremmer

Mark is seeing double this month, and not because someone clouted him over the head either – it's stereoscopic time

Lin Wen

Do you like to go fast? If you like underground, urban race cars like those in *Need for Speed*, then here's your fix

Sebastian Storz

Take a magical scene, throw in amazing detail and a fabulous colour scheme and then get Sebastian to explain how he did it

Lance Hitchings

Lance runs a design studio stateside, and is also the chap manning the Q&A help desk for your 3D problems

Jie Ma

Witness the fall of the capitalist socioeconomic system and then follow Jie's tutorial in making it in 3D

Lee Davies

Lee is employed as a character modeller for a Dublin-based company. He's here to answer your character questions

April Madden

April is technical editor on **Corel Painter Magazine** and a graphic artist. We gave her a pile of books to review

Julie Easton

Foraging through the dustbins of the industry in search of news, it's Julie, deputy editor of **Advanced Photoshop**

Stefan Minning

Fresh from finishing a Disney-style short movie, Stefan from Studio Lampion gives us the lowdown on how it was made

Carlos Fueyo

Carlos comes clean on what you need to know to get into the architectural vis business in our insider interview

Ryan Lim

It's Wilhelm the First astride a giant German steam-powered robot. Let's get steampunk with this tutorial

Tim Shelbourne

When he isn't standing in fields scaring crows, Tim is doing a sterling job explaining how to use Vue 7 Pioneer

Sign up, share your art and chat to other artists at www.3dartistonline.com

3DArtist

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Discover how these images were created...

76 **Create a steampunk robot**

"It is a fighting robot created for war, but mainly used to protect the emperor"

Five-page behind-the-scenes guide to the creation of this image

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The Studio

Professional 3D advice, techniques and tutorials

"The D in 3D is not just physical dimensionality, but emotional dimensionality"

Jeffrey Katzenberg from DreamWorks Animation. **Page 34**

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Video tutorial: Maya animation

Direct from Gnomon, there's a ten-minute lesson in character animation on the CD

Plus software, models and resources worth over $300

Turn to page 110 for the complete disc contents

On the Disc

Free: Vue 7 Pioneer

Plus $100 content! Turn to page 110 for details

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Six-page guide to making a *Need for Speed* urban car scene

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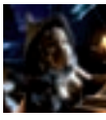

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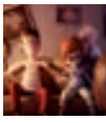

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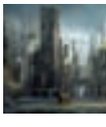
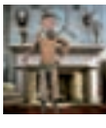


74 I made this: **Adrian Moos, *The Trophy Room***
The golf balls are flying in this humorous lounge scene



76 Step by step: **Steam-powered German robot power!**
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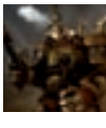

Continued overleaf

There's even more inside...

Turn the page to discover the interviews, reviews, industry advice and more that we've packed into this issue...

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You don't want to miss an issue and it will save you lots of cash

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There's good stuff on there – Vue 7 Pioneer for a start

See your artwork here...
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"We are doing a lot of work in the Gulf; the majority is concentrated from our new Abu Dhabi office"

Robert Herrick discussing architectural visualisation. **Page 28**

workspace 3D

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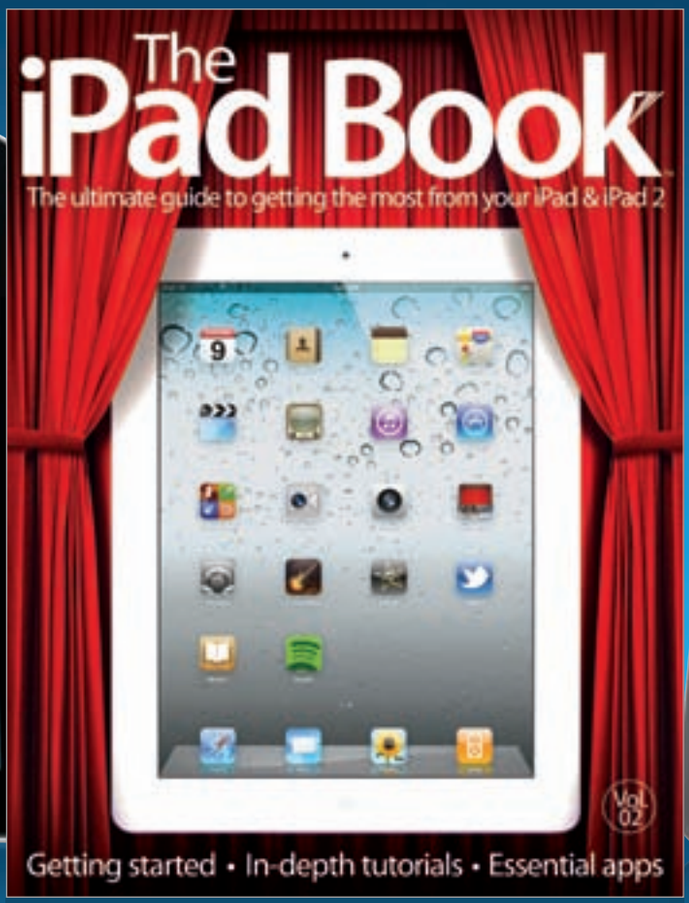
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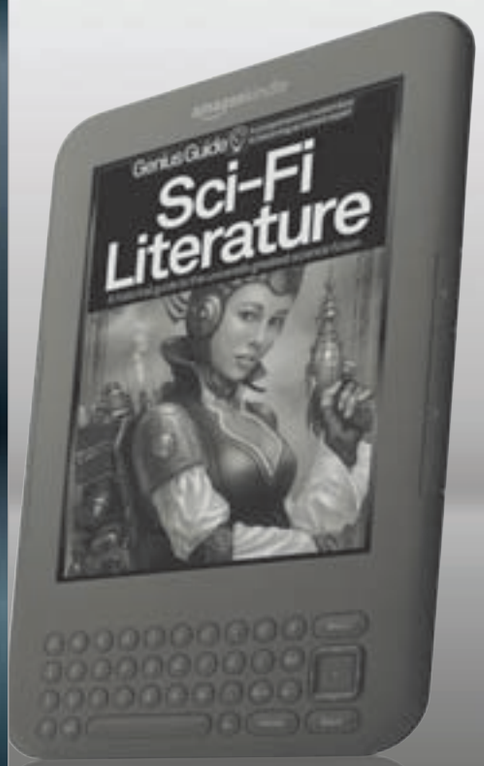

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WELCOME TO THE GALLERY

11 pages of the greatest artwork from the 3D community

Images we love!

> My wife and I had the idea to model everything in the highest detail, just as though it were real life. We used just Maya, without ZBrush, so it was hardcore modelling just for fun!
>
> **Piotr Fox Wysocki** *Last Elf*, 2006

Artist info

Piotr Fox Wysocki

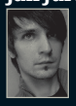
Personal portfolio site http://fox.cgsociety.org/gallery/

Country Poland, but I live in New Zealand

Software used Maya, mental ray, Photoshop

Featured artists

Hamid Ibrahim
Down in the depths, strange characters peer out from bottles and canisters



Jan Jureczko
Can you work out where the headphones start and the bikini finishes here?

David Moratilla
Bringing an alien life form to life with super character and expression

Lino Masciulli
Lino's image has an evil queen and a bald cat – surely two of our favourite things!

Fabricio Moraes
Superb imagining of a fictional character with great colour and warmth

Timohir Blajev
Let your jaw drop at the authentic colours in this all-action air combat scene

Anastasiya Igolkina
This image just shows what you can do with DAZ Studio if you have the skill

Luis Arizaga Rico
Charming and engaging image from Luis that really does pack a punch

Get your artwork featured in these pages

Simply send it to the **3D Artist** Gallery. Here's how...

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1. Register with us

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3. Tell us about them!

Have an image you feel passionate about? Drop editorial an email at **duncan.evans@imagine-publishing.co.uk**

Email or post

You'll be missing out on a thriving 3D community, but if you'd rather submit your work by email or post, here's how. Make sure your image is at least 3,000 pixels on the longest side, save it as a maximum quality JPEG or zip it up as a TIFF and email it to the address below. Please include your contact details! If you've created a Pixar-beating animation and want to see that featured on the cover CD, then save it onto a CD and post it to us. You can also send your images on CD. The addresses are:

duncan.evans@imagine-publishing.co.uk

The Gallery, 3D Artist, Imagine Publishing, Richmond House, 33 Richmond Hill, Bournemouth, Dorset, BH2 6EZ

Comment on more great 3D art...

Head straight over to **www.3dartistonline.com, register and you can leave comments for other artists. Some of the people featured here already have their galleries, so get online and join our club!**

Create your gallery today: www.3dartistonline.com

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Artist info

Hamid Ibrahim

3DArtistonline.com
Username ihamid

Personal portfolio site
http://ihamid.cgsociety.org/
Country Maldives
Software used Maya, Photoshop, mental ray

Work in progress...

The team Loves

"It's a charming image that involves alien characters, but are they underwater or are they breathing air? Hamid has played around with the concepts here to give a surreal feeling to the image"

Lora Group Art Editor

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“Most of the models were shaped using polygons (apart from the mushrooms, which are NURBS surfaces). All the different parts of the steam machine were created separately, down to the tiniest bolt, then arranged like a jigsaw puzzle”

Hamid Ibrahim *The Rannamaari*, 2009

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> The character was posed and morphed using DAZ Studio, and then sculpted with ZBrush to add a more unique look. Maria's hair is a 3D model post-worked in Photoshop. The scene was illuminated with an HDRI map and one large area light placed above the figure
>
> **Jan Jureczko** *Maria*, 2008

The team Loves

> Here's how you take the DAZ Studio and a standard model, use accessories, create a style and pose and light it perfectly to come up with something eye catching and original.
>
> **Ross** Head of Design

Artist info

Jan Jureczko

Personal portfolio site http://yannek.cgsociety.org/gallery/

Country Poland

Software used DAZ Studio, DAZ 3D Victoria 4 Model Pose, Photoshop, ZBrush, 3ds Max

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The team Loves

"It's all in the expression. To get such character and expression into the face of a non-human figure is a real triumph. You can almost smell the smoke from here"

Jo Editor in Chief

"I made this image as a way to apply all that I had learnt in the past few years. I wanted to create a highly detailed character and give him some personality. I tried to make this image as believable as I could, and spent a lot of research on every element of the scene"

David Moratilla *Poker Master*, 2009

Artist info

David Moratilla

3DArtistonline.com

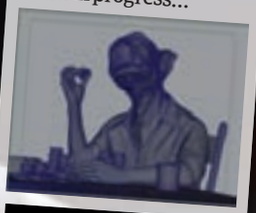
Username dmoratilla

Personal portfolio site http://dmoratilla.cgsociety.org/gallery/

Country Spain

Software used Maya, ZBrush, Photoshop, mental ray, BodyPaint 3D

Work in progress...



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> The intention was to create an illustrative rather than a realistic image in order to help convey the character of the queen posing for a portrait. As a dark queen with a strong character, an illustrative approach seemed right
>
> **Lino Masciulli** *The Queen's Portrait*, 2008

The team Loves

> It's an evil-looking queen with plenty of cleavage and a hairless cat. Fantastic, what more do you want in a render? Oh yes, the fur collar is sensational
>
> **Duncan** Editor

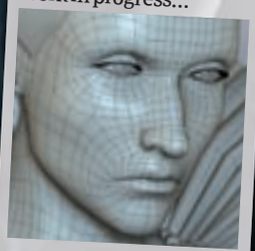
Artist info

3D image:
Lino Masciulli
Concept and 2D:
Sara Spano

3DArtistonline.com
Username Cardinal

Personal portfolio site
www.cardinal3d.com
Country Italy
Software used CINEMA 4D, Adobe Photoshop

Work in progress...



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"I was inspired by an antique Spanish statue that has very strong lines in its form. It was very satisfying to see the final image and realise it became exactly what was in my mind. It was great to get references from classic paintings, study them and get a better understanding of lighting and composition"

Fabricio Moraes *Don Quixotee*, 2007

The team Loves

"Fabricio has taken a traditional character and given it his own exaggerated interpretation. We love the armour and the expression on his face"

Lora Group Art Editor

Artist info

Fabricio Moraes

Personal portfolio site http://fabmoraes.cgsociety.org/

Country Brazil

Software used 3ds Max, mental ray, Mudbox and Adobe Photoshop

Work in progress...

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The team Loves
Great piece of polygon modelling for the plane, but the real success in this image is the use of historically accurate textures and the faded colour scheme that matches the era perfectly
Duncan Editor

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"The piece was modelled in Silo, then was exported into 3ds Max for texturing and rendering with V-Ray. It took about three weeks to make, using standard modelling techniques (polygon modelling). The greatest challenge was texturing the plane and the search for appropriate World War II plane textures. Another challenge was appropriate planes for the background, colour-matching the planes with the 3D models and realising my idea of the mood in the image. The texturing problems were dealt with through hard work in Adobe Photoshop"

Timohir Blajev *Messerschmitt Bf 109E*, 2009

Artist info

Timohir Blajev

3DArtistonline

Username: Xray

Personal portfolio site http://raylight75.cgsociety.org/gallery/

Country Bulgaria

Software used 3ds Max, Silo and Adobe Photoshop

Work in progress...

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Artist info

Anastasiya Igolkina

3DArtistonline.com
Username Igolochka

Personal portfolio site
www.renderosity.com/mod/gallery/browse.php?user_id=554889

Country Russia

Software used DAZ Studio, Adobe Photoshop Elements

Work in progress...

The team Loves

"If you ever wondered whether you could create something both different and striking with DAZ Studio, here's the proof that it's possible. Great colours, nice pose and a brilliant use of resources"

Ross Head of Design

"Vanadisa is a pretty young girl. Her textures and morphs were created by Freja and Adiene for use in Poser or DAZ Studio. I got her as a gift from Sabreyn, my very good friend at Renderosity.com, and decided to create a portrait with her"

Anastasiya Igolkina *Vanadisa*, 2008

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This is a cartoon character that I had in mind a while ago. I was looking for a little cartoon girl with a mix of Western and Eastern culture. I was also influenced by the Japanese 'super-cute' fashion. Round and clean shapes were very important in this concept. She was modelled and rigged for animation

I Love KungFu *Luis Arizaga Rico*, 2008

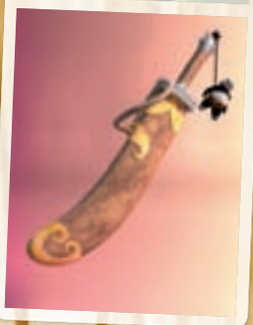
Artist info

Luis Arizaga Rico

3DArtistonline.com
Username: Arizaga

Personal portfolio site
www.digital-rebel.com
Country Spain
Software used 3ds Max, mental ray, Photoshop

Work in progress...



The team Loves

Completely charming and engaging character study that's bright and cheerful, yet also packs a punch

Jo Editor in Chief

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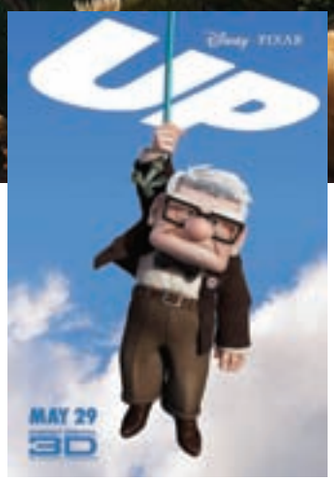
Carl Fredricksen and stowaway Russell find themselves exploring South America in *Up*



Up will be presented in Disney Digital 3D in selected cinemas

First 3D flick ever to open Cannes

Disney and Pixar's film *Up* will kick off film festival proceedings

Disney and Pixar's latest feature-length 3D animation has been picked to open the 62nd Cannes Film Festival in May. Animated movies have been shown at Cannes in previous years, including titles such as *Dumbo*, *Shrek* and *Shrek 2*, *Over the Hedge* and *Kung Fu Panda*, but *Up* will be the first ever 3D flick to actually start the prestigious event.

The organisers' decision to screen the 3D animated adventure first sends out extremely positive signals to the 3D art community, suggesting that the film industry now regards animated movies as highly as motion pictures. Disney and Pixar's chief creative officer John Lasseter explained the significance of this to the website Variety, saying: "This is a huge step for animation and further supports our belief that a great animated film is simply a great film."

Made by the same team who worked on *Monsters, Inc.*, *Up* is the 10th film from Disney and Pixar. The film is a comedy about an elderly balloon salesman who fulfils his life's dream of going on a big adventure. He ties masses of helium balloons to the roof of his house and then flies away to South America. The voice talent includes John Ratzenberger (*Toy Story*, *WALL·E*, *Monsters, Inc.*), Christopher Plummer (*Twelve Monkeys*) and Delroy Lindo (*Gone in Sixty Seconds*).

Up is due out in UK cinemas later this year. Visit http://disney.go.com/disneypictures/up/ to take a peek at the film's trailer.

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Previous winners

Palme d'Or - The Class (2008)
Grand Prix - Gomorrah (2008)
Palme d'Or - 4 Months, 3 Weeks And 2 Days (2007)
Grand Prix - The Mourning Forest (2007)
Palme d'Or - The Wind That Shakes The Barley (2006)
Grand Prix - Flanders (2006)

> "This is a huge step for animation and further supports our belief that a great animated film is simply a great film"
> **John Lasseter** Disney and Pixar's chief creative officer

3DArtist online.com

Discuss what you think of the latest 3D animated films and more with other 3D artists at **www.3dartistonline.com**

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3D web update

New sites and changes to your favourites – it's all here!

NewTek demos

NewTek is producing free live demos of its 3D animation products in action. The sessions will be held every fortnight and each will focus on one of the company's products. The first demos to hit the site were TriCaster and 3Play.

TriCaster enables users to produce network-style videos for the web or video. Meanwhile, 3Play is a program with instant replay and slow-motion features to be used in broadcasts or webcasts.

To watch the demos, head over to **www.newtek.com/demo** and fill out the registration form to select which live demonstration you want to watch.

A new eBook from 3DTotal

3DTotal, the popular online resource for 3D artists, has released a *Creature Concept Design* eBook. It is written by Mike Corriero and is intended to help you make a feature of your creature. The training guide presents six chapters with over 50 pages of information outlining the basic and more imaginative aspects of creating two-dimensional critters in Photoshop.

The *Creature Concept Design* eBook weighs in at 44MB, and can be downloaded for £9.95 from the 3DTotal website now. For more details, visit **www.3dtotal.com**, click on books under the Products drop-down menu, then select eBooks from the Categories list on the left-hand side. Find what you're after, give it a click and get all the information you want!

Masterpiece '66 Volkswagen

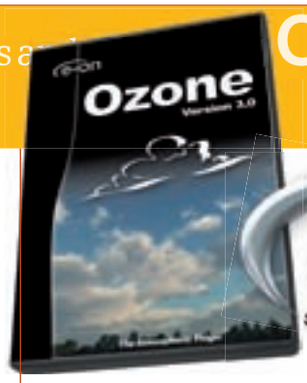
We take a look at an artist who enjoys capturing the qualities of vehicle design

Dean Field

Dean Field currently develops curriculum for the computer animation school New Media Campus. "I really like the challenge of capturing automotive design using hard-surface modelling," Field explains.

'66 Volkswagen took him three days to model all the parts and an extra week setting up materials and lighting. The image was created using Maya and mental ray. "I wanted to create an image that people would look at and smile." That's certainly been achieved here.

Since designing the '66 Volkswagen, Dean has gone on to produce this image



e-on software

Seeking submissions

Vue maker wants to see your work

e-on software is on the lookout for recent commercial projects by Vue artists for its 2009 showreel. If selected, the work will be showcased at a variety of shows and conventions, including Siggraph in August. The submitted projects, which ought to have involved Vue or Ozone, can be anything from films to architectural walkthroughs. Applicants should list any third-party applications that helped create the work, but there are no restrictions on what apps have been used alongside Vue or Ozone.

If you would like to take part, then take a look at **www.e-onsoftware.com** to find details on the submission process. The deadline for entries is 15 May 2009. Best of luck, and if any reader does get selected then remember where you heard about it first!

Fancy foliage

SpeedTree 5.0 beta debuts at GDC

A beta version of SpeedTree 5.0 was shown at the Game Developers Conference. The update hopes to offer chances of creating better modelling and rendering of trees and other plantlife.

The 5.0 instalment will enable users to guide and prune branch shapes, and even grow models around imported meshes, such as rocks. It also has built-in support for NVIDIA's PhysX APEX Vegetation Module, too. In addition to that, the levels of detail on offer mean that you can cram more trees in your image than ever before. Take a look at SpeedTree 5.0 on **www.speedtree.com**.

Website of the month: Planit 3D www.planit3d.com

Planit 3D is a great resource for artists

Planit 3D was created back in 2001. Offering a wealth of freebies to its users, artists can choose from free models, meshes, software, textures and even sound effects. There is a wide range of interviews with artists, companies and even the website's staff members themselves. Explaining why the site was created, Planit 3D's founder Fitzy said: "I wanted my own resource library that I could access from anywhere in the world." Its bustling forum contains all the usual topics, and special free stuff is offered to its members. If you haven't done so already, we recommend you take a look.

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Free 3D Resources

Free models online

Take advantage of high-quality models that cost nothing more than a few mouse clicks

Free 3D resources

Not content with plugging its eBook this issue, 3D Artist points you towards the rest of what 3DTotal has to offer

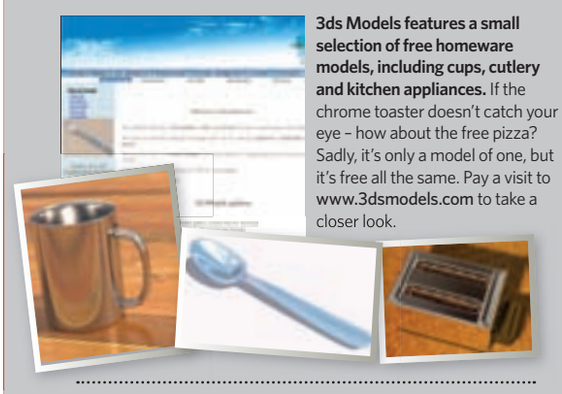
Web: www.3dtotal.com

3DTotal is a great resource for artists, and its selection of 3D models is particularly useful. You'll find many different categories to browse through, ranging from humans to mechanoids. There are also free textures and tutorials on offer.

3ds Models

Collect your culinary creations from here

Web: www.3dsmodels.com

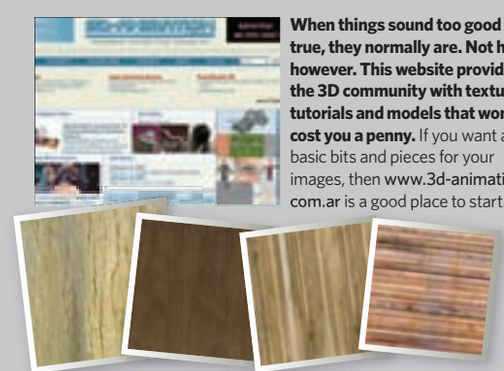


3ds Models features a small selection of free homeware models, including cups, cutlery and kitchen appliances. If the chrome toaster doesn't catch your eye – how about the free pizza? Sadly, it's only a model of one, but it's free all the same. Pay a visit to **www.3dsmodels.com** to take a closer look.

3d-animation

A wealth of freebies at your fingertips

Web: www.3d-animation.com.ar

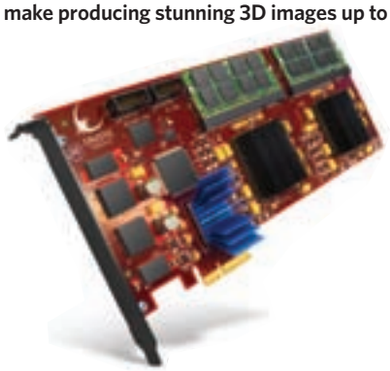


When things sound too good to be true, they normally are. Not here, however. This website provides the 3D community with textures, tutorials and models that won't cost you a penny. If you want a few basic bits and pieces for your images, then **www.3d-animation.com.ar** is a good place to start.

Raytracing reinvented

Computer graphics company Caustic Graphics claims it will increase the speed used to create realistic 3D imagery

Caustic Graphics reckons that its new technology, CausticRT, is expected to make producing stunning 3D images up to 20 times quicker with its new raytracing software. What raytracing does is duplicate the natural physics of light, which enables the user to create realistic images by tracing the path of light through scenes. It was previously out of reach to designers and animators due to high costs and demanding system requirements.



Thanks to Caustic Graphic's new raytracing software, it's quicker and easier for 3D artists to produce images

The technology behind CausticRT is expected to make it easier and cheaper for artists to get from the initial concept to the final product. "Caustic puts the power of a render farm, operating at interactive speeds, on every desktop," said Ken Daniels, CEO at Caustic Graphics.

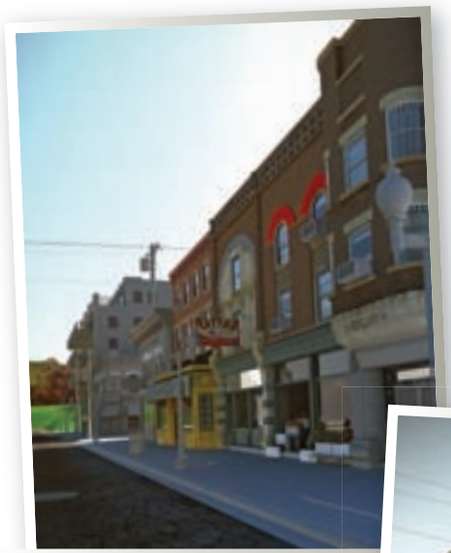
For more information, take a look at what's on offer at www.caustic.com.

work in progress

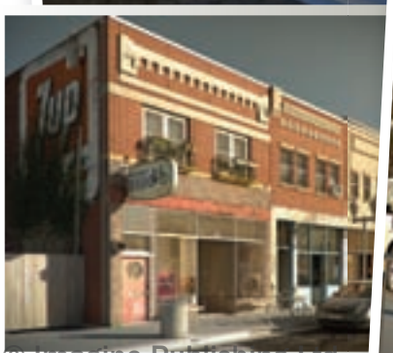
Bike Shop Exterior

We chatted with Alberto Hernandez, a 3D environment artist from Los Angeles, and discovered what was his motivation behind creating his *Bike Shop Exterior* image

Alberto Hernandez http://albertohernandezjr.com/



Alberto started out professionally in the 3D industry back in 2004. Specialising in environments and prop modelling, he has been working on *Bike Shop Exterior* in his spare time, which has taken around two to three months. Created using 3ds Max, V-Ray, Photoshop and Shader Map Pro, Alberto explains that one of his aims was to test his texturing and lighting skills: "I set out to do just one side of the street, focusing only on the bike shop, but I started branching out the scene to include the building across the street."



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Artist spotlight

Capturing reality

Rakesh Sandhu is a 3D artist who enjoys re-creating reality, and his short animation Kid is proof of that

Rakesh Sandhu http://rsandhu.net/

Rakesh Sandhu is an artist with a passion for working on lighting, as he feels it "brings life to everything." His project, known as Kid, is an incredibly lifelike short animation that was created in just a few weeks. He based it on an image he saw on Flickr, saying: "I liked the composition of the image and the innocence of the kid's eyes." A recent graduate of Vancouver Film School, Rakesh is now employed by Anthem FX to work on modelling, texturing and lighting. Rakesh's next project will be a joint effort between him and his friends; together, they're expected to produce an animation of a lizard.

Software shorts

Get the lowdown on updates and launches

Maya 2009 update released

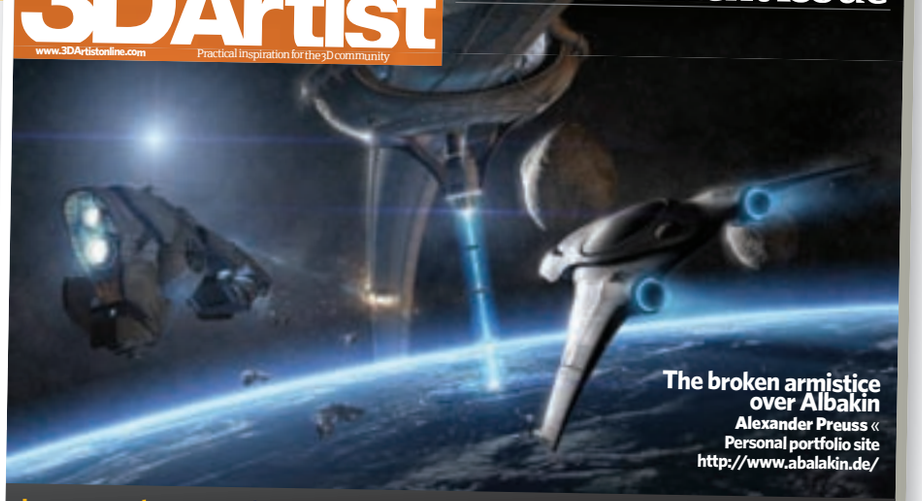
The Maya 2009 Service Pack 1 was released by Autodesk at the end of March. Applicable to Maya 2009, Maya Complete 2009 and Maya Unlimited 2009, it hopes to provide various fixes for the program, totalling over 100, including areas such as Rendering, Assets, Modelling, Animation and Rigging, Dynamics and Effects, Python scripting and API. In order to download this update, point your browser to **http://autodesk.com/** and get up to date!

mental image's mental mill

mental images has launched two editions of mental mill, which will offer the 3D artist a whole new approach to shader creation. The Standard Edition of mental mill will provide shader authoring features and instant mental ray preview rendering, while the Artist Edition will help users to assemble shader graphs from the library provided and tweak the parameters. For more information and to download a free beta of the Standard Edition, visit **www.mentalmill.com**.

3DArtist 03
www.3DArtistonline.com
Practical inspiration for the 3D community

What's in next issue



The broken armistice over Albakin
Alexander Preuss «
Personal portfolio site
http://www.abalakin.de/

Learn how this incredible image was created

Issue 3: on sale 27 May

For more issue 3 information, visit **www.3dartistonline.com**

Tools of the trade

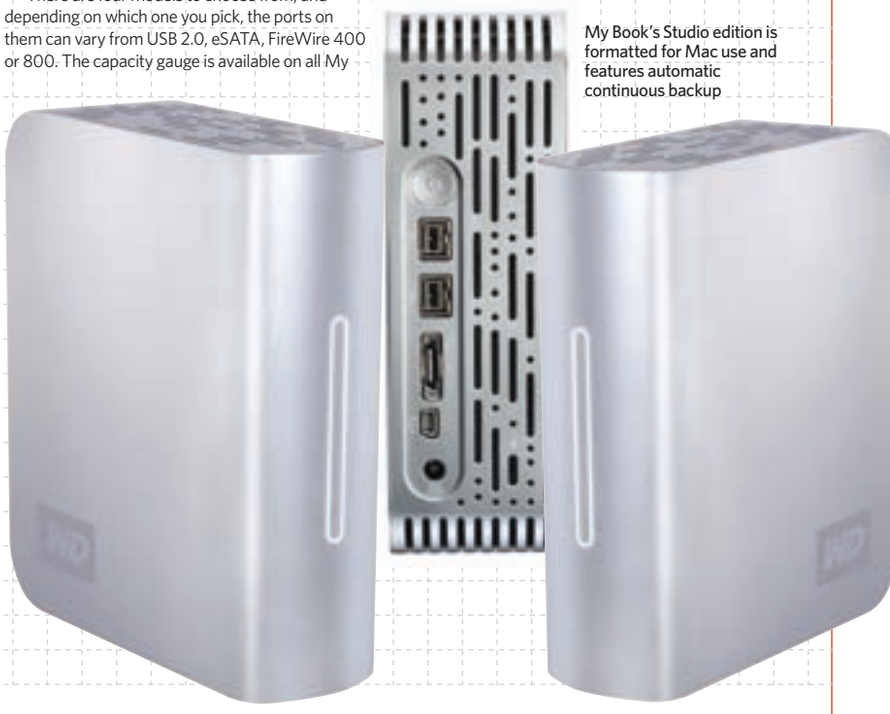
WESTERN DIGITAL 2TB EXTERNAL HDD

Offers the largest capacity in a single-drive HDD

Western Digital's My Book external hard drive range can now hold even more data. The popular product line offers users up to 2TB of stylish storage, helping to alleviate both Mac and PC users of their storage woes.

There are four models to choose from, and depending on which one you pick, the ports on them can vary from USB 2.0, eSATA, FireWire 400 or 800. The capacity gauge is available on all My Books, which is great for those who like to keep tabs on how much space is left. Meanwhile, the SmartPower and Safe Shutdown features ensure your files are as protected as possible.

For more on the range, visit **www.wdc.com/en**.



My Book's Studio edition is formatted for Mac use and features automatic continuous backup

3DArtist online.com

Create your gallery, browse the artwork, chat with experts and artists and get tips and techniques at

www.3dartistonline.com

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Have your say

Mac users will find their needs well catered for in future

Write, email or use the website forums to get in touch about the magazine, your problems or triumphs

Send your letters to...

Email the team directly with your letter
3dartist@imagine-publishing.co.uk

Log in, and leave your comments on the forum
www.3dartistonline.com/forum

POST TO:
The Editor, 3D Artist,
Imagine Publishing,
Richmond House,
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BH2 6EZ. UK

Glue it up

The glue that holds the disc inside the magazine must be changed. It destroyed the page it was stuck to. There goes my pristine copy of the magazine! Other than that, I'm enjoying browsing through it for now, and will give it an in-depth read later this evening. Oh, and try not forget us Mac users when you put items on your coverdiscs in future please.

Mike R, forum post

Hmm, it does seem as though the CD in some copies has a particularly strong hold on the page. We'll have a word with the suppliers and see what can be done. I guess it's better for the CD to hold firm than come loose, though... Don't worry – we give some love to Mac users on issue 2's disc – see below.

Mac or PC

I feel, as this is a first edition, let down because I'm a Mac user. The cover and the inside said you were offering DAZ Carrara Pro free. As a 3D artist using CINEMA 4D, Poser, DAZ Studio and many other packages, I thought this would be a good chance to try it out. Not until I got to the section about Carrara in small print, did it say PC only! Being Mac based, this is no good. I think you should make it clear on the front of the mag. Although, I didn't just buy it for Carrara but for the illustration-based subjects created in 3D, not offered by other 3D mags. I'll be taking a monthly subscription. Good luck!

Adrian Bibby, by email

Reply: *Welcome aboard Adrian. Yes, we're sorry about the loss of the Mac version. We were supplied with it, but we couldn't fit both versions on the disc. To avoid this kind of thing in future, we are going to have a locked area of the 3DArtist website which needs a code from the magazine to unlock. This will then contain all the stuff that we'd got for you but couldn't fit onto the disc that month. The good news is that the Vue 7 Pioneer program on the disc this issue has both Mac and PC installs.*

Generic workshops

Hi there, nice issue – but I was wondering if you will be doing any generic workshops on making clothing and weaponry. By this I mean instructions that could be used in most 3D programs and not just the expensive ones. Making a sci-fi gun could be done in simple stages with primitives, so it could be made in 3DS, Maya, Hexagon, Blender, etc.

All the best.

Richard, forum post

Although the tutorials use certain programs, Richard, there will also be lots of artistic tips that people can utilise in whatever program they are using. We will also have more specific tutorials that focus on one element – such as your example of a sci-fi gun.

If you have a certain something that you are struggling with, let us know and it can be incorporated into the Q&A area!

Set up your online gallery

REGISTER AT OUR WEBSITE, UPLOAD IMAGES, CONTRIBUTE TO THE FORUMS

www.3dartistonline.com

01 Register your details

First click on the Join Now box in the top right corner. Fill in your personal details – the ones in blue are mandatory. Think of a good member name and a password. When you're happy, click Create User. You'll be sent an email with a link. Click this and enter your password to activate your account.

02 Log in

Your account is now created. Every time you visit www.3dartistonline.com, enter your user name and password to log in. If your PC or Mac allows cookies you can store the password and log on automatically. Click the top left link to access your account. Now click on Add New Image to add some images.

03 Upload pics

Fill in the title of your pic and describe how you made it, what it was for. Pick a category and navigate to the image for the upload. It can be 1280 x 1024 max, and must be a GIF, JPG or PNG. Hit Submit Image. After a short delay while we approve it, it'll be added to the Gallery and your portfolio.

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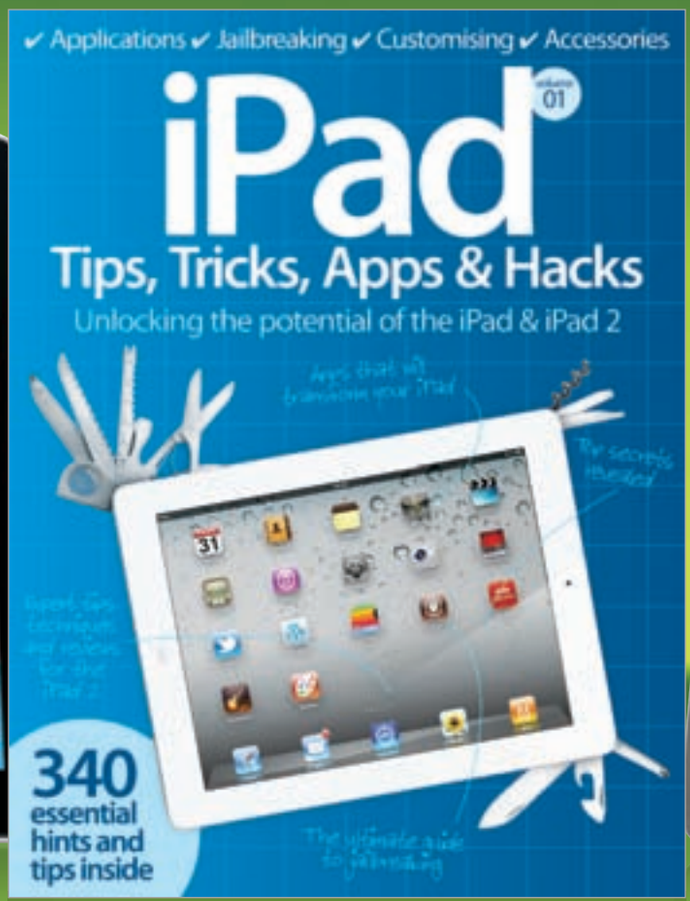
We don't keep secrets

iPhone
Tips, Tricks, Apps & Hacks
The insider's guide to unlocking the potential of the iPhone
340
essential hints and tips inside

iPad



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Tips & Tricks™

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Duncan Evans talks to Robert Herrick about the world of architectural visualisation and the work that the visualhouse undertakes within it

Visualising the world

Company The visualhouse
Founded 2003
Company website www.visualhouse.co.uk
Country UK, US, China
Software used 3ds Max, V-Ray, mental ray
Expertise Architectural visualisation
Client list KPF, Foster and Partners, Candy & Candy, HOK, David Chipperfield Architects, Grimshaw Architects

> We're completely different to most other studios. We act as an extra addition to the architect's team, working with them from the very start throughout the design process
>
> **Robert Herrick** founder and owner, on the visualhouse's work ethos

Robert Herrick, a graduate architect with a passion for visualising architectural 3D designs, founded the visualhouse in 2003 with the direct purpose of bringing fantastic visualisation directly to fellow architects. The aim of the company is to provide high-quality, reliable productions of 3D images and animation for developers, advertising agencies and architects. With this ethos in place, the visualhouse has worked for some of the world's largest architectural and marketing firms. The company has taken a traditional and formal architectural background and developed cutting-edge technique to deliver ultra-realistic and visually pleasing visualisations.

The visualhouse has a main office in London, but currently has offices in New York, Shanghai and more recently in Los Angeles, Chicago and Abu Dhabi. This makes the visualhouse one of the largest visualisation companies around. The positioning of the offices was deliberately targeted to be in the world's major architectural hubs so that they could work closely with the clients themselves.

At the visualhouse, Herrick concentrates its efforts on the architectural market, with services ranging from photorealistic verified planning imagery to full-length films of new master plans in the Middle East. Essentially, it acts as an external 3D department for some of the world's major architects, attending to all their visualisation needs.

3DArtist: *What would you say sets the visualhouse apart from other architectural visualisation studios?*

Ⓐ American Commerce Centre for Architect KPF cityscape visual

Ⓑ

Ⓑ American Commerce Centre for Architect KPF mode

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> We moved on to the large task of modelling the whole of Philadelphia in reasonable detail. We managed to achieve this in a weekend

Key Project

American Commerce Centre

Client Kohn Pederson Fox

In early September 2008, Kohn Pederson Fox Architects in New York approached us with the American Commerce Centre project. The scheme is in Philadelphia and set to be one of the largest towers in the States. KPF wanted a four-minute film and six still renders in a time frame of three and a half weeks. Always keen for a challenge, we readily accepted.

Myself and Christian Shoup (director at the New York office) were running the project with a team of five for the animation, three for the still images and a team of four modellers in our Shanghai office. As always, we began by receiving all the relevant CAD drawings and information from the client. This was then handed over to our modelling team in Shanghai, who completed the scheme model in a record 28 hours in high detail. The model was then passed to the client for comment and further embellishment. Once the model was resolved, it was handed over to the animation and stills teams.

Because the still images were photomontages, they were pretty straightforward. Our in-house photographer was able to get access to adjacent buildings and achieve the desired compositions. The lighting, materials and cameras were all set up in 3ds Max and rendered out in V-Ray, with final Photoshop tweaking and finishing.

The animation required further thought, however, after agreeing on the storyboard and paths with the client, we moved onto dealing with the context. In projects with tighter time frames and budgets, we find it's usually best to do everything in 3D. This cuts out the need for helicopter footage, etc. So we moved on to the large task of modelling the whole of Philadelphia in reasonable detail. We managed to achieve this in a weekend. First, we concentrated our effort into zones of detail, the area around the tower and immediately around the paths being the highest detail, the further surrounding city being medium detail and the suburbs being low poly. The low-poly suburbs were relatively straightforward. We used our own city-generation MAXScript, which works in a similar way to Greeble but actually generates road layouts and building detail/textures, etc. For the more detailed areas, we used a combination of OpenGL extraction scripts from Google Earth and manual modelling. The result was not only fast but looked great. Once we had confirmed the camera paths, it was on to rendering at our in-house render farm in London. From there, it was compositing all the passes in After Effects and Fusion. The final film was then edited and the music we composed was inserted.

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Key Project

Bahrain Water Gardens

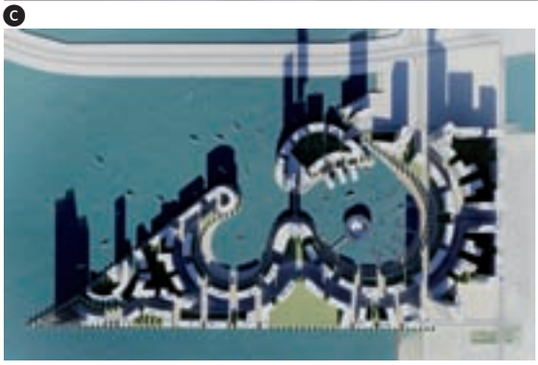
Client HOK London

In June 2008, HOK London asked us to work very closely with them on a new master plan they were designing in Bahrain. Our brief was to work with the design team over the course of two months to produce imagery and eventually final visuals and an animation of the proposal.

We began by modelling up the proposed design and context, which helped the team to make their decisions. Because we were doing a wide range of animation and still imagery for this project, we decided to use mental ray as our primary render engine, which worked out fantastically as Final Gather maps are very flexible compared to V-Ray's irradiance maps. As the team developed their final design in Revit, we were ready to implement that into our master model (containing the context). From there, we simply animated the requested cameras, embellished the model with low-poly trees, cars, detail, etc, and then moved on to the lighting. Because we used MR with a simple daylight system, the lighting was straightforward. For the external night shots, we lit the buildings by arraying invisible boxes on the building's floor plates with MR glow materials on them at random quantities. This worked well at giving a variation to the quality of the facades. From here, we moved to final rendering and compositing in Fusion.

> "For the external night shots, we lit the buildings by arraying invisible boxes on the building's floor plates with MR glow materials"

C



C Blocked out top view of structures for Bahrain Water Gardens

D

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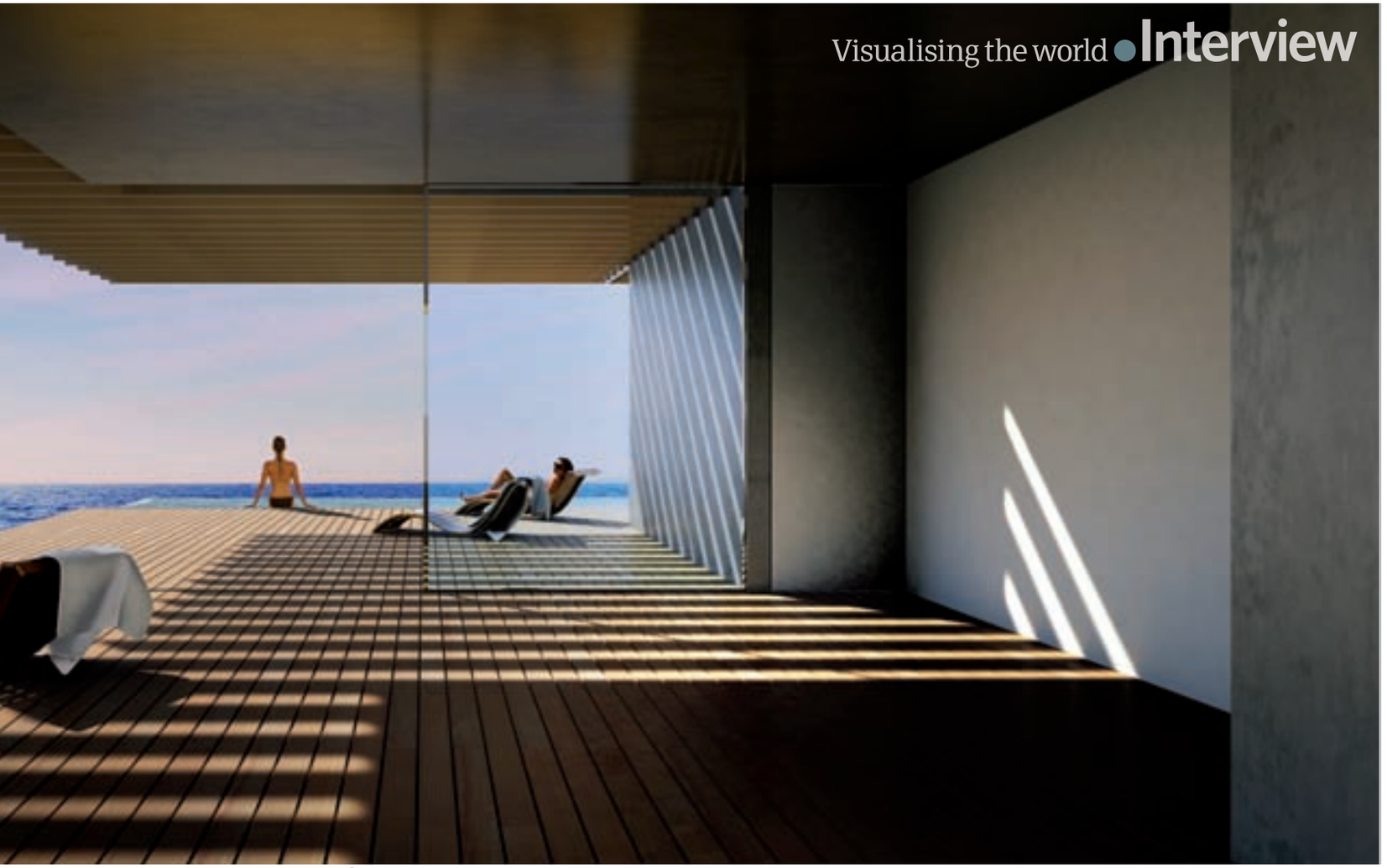

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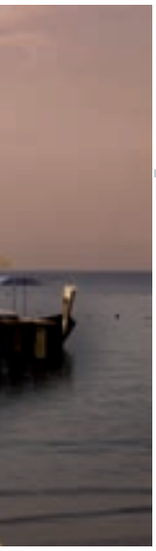

E

> Each project requires a different approach; sometimes the straightforward photorealistic image isn't the best option

Robert Herrick: We're completely different to most other studios. We really do act as an extra addition to the architect's team, working with them from the very start throughout the design process. We understand that fantastic visualisation is not just reserved for final marketing images, it's now a necessity in a project at all stages in the design. In the current market, architects need to keep their clients enticed at all times. The visualhouse works with them from the beginning to achieve this visual consistency throughout.

3DA: *Tell us about the technique of AVHSi. What is it and why did you patent it?*

RH: AVHSi (Accurate Verified HDRI Stereo Lithography Imagery) is the process of using stereo lithography within a full Spheron HDR image to produce co-ordinates of static objects within the image. This information can then be transferred via MAXScript to 3ds Max and create highly accurate 3D camera locations for verified planning imagery. This is singularly the most efficient and cost-effective way of producing highly accurate verified imagery for planning.

3DA: *You've worked with a lot of the big-name companies in the industry. Who are or have been some of your main clients?*

RH: The visualhouse has an extensive client list, but to name a few: KPF, Foster and Partners, Candy & Candy, HOK, David Chipperfield, Grimshaw Architects. Really, the list is endless.

G

3DA: *Your portfolio covers a range of styles, from commercial, residential and competition work to public and cultural, sports and leisure, and specific building types like bridges and tall buildings. Is the approach different for each, or is it always tailored to the project itself?*

RH: We believe that each project requires a different approach; sometimes the straightforward photorealistic image isn't the best option to convey an unresolved design. Over the years, we've developed a wide range of styles that can be applied in a number of suitable situations. Working with such clients as Foster and Partners, we have developed a style of abstract imagery that works fantastically at setting a mood and not revealing a detailed design, yet still looks resolved.

E Vanari for Brigitta Spinocchia jetty visual

F Syria Hotel for Foster and Partners room visual

G Levera for Brigitta Spinocchia villa visual

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> The majority [of work] is concentrated from our new Abu Dhabi office. But this is also a declining construction market

3DA: *What software did you use to model and render most of your still and animated projects with?*

RH: Our primary software is 3ds Max used with V-Ray and mental ray as the main render engines. There is also a wide knowledge of other 3D packages throughout the teams in the offices. We typically get models in DWG, Rhino, MicroStation, Revit and SketchUp format from clients.

3DA: *How many people typically work on a project in-house?*

RH: This really depends on the workload and deadline, but typically directors run projects, consultants (senior artists) manage the workload and 3D artists help throughout. As an example, a one-week, four-image project would typically have one consultant and two artists working on it.

H The envisiged lobby of the American Commerce Centre. Designed for Architect KPF

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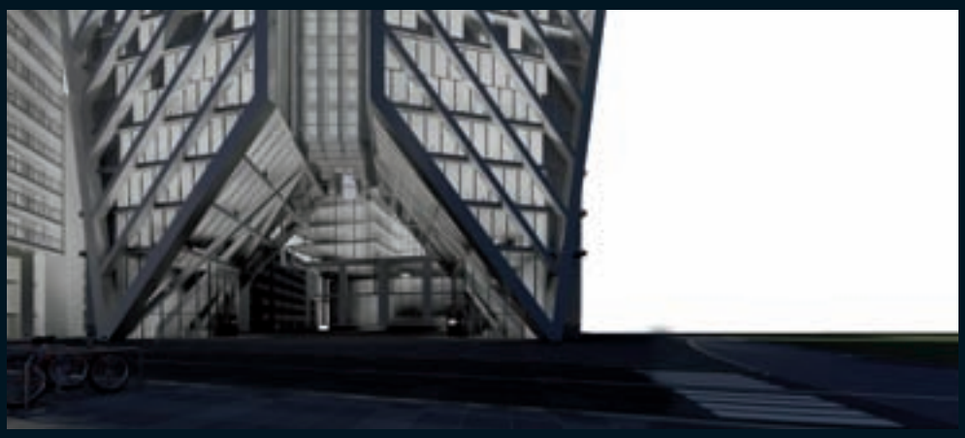

Key Project

Ealing Arcadia

Client Foster and Partners

In September 2007, Foster and Partners asked us to look at a tall residential tower proposed in the contentious area of Ealing, London. The brief was fairly simple: create a series of external visuals to market and sell the current design to the planners. Being that the building was in a very low-rise residential area, our composition choice was critical. We wanted to sell the scheme but try and reduce the impact as much as possible. After agreeing a series of viewpoints with the client, our process was straightforward. We took the original Foster's model and embellished it further in 3ds Max, textured it, lit it and prepared for rendering in mental ray. We chose mental ray for speed reasons, as we were working to a tight deadline (one week) and every second counted. The final render was very heavily embellished in Photoshop (see the before and after shots).

> "We wanted to sell the scheme but try and reduce the impact as much as possible"

I

3DA: *The Gulf States are the current hotspots for architectural visualisation. Are you doing any work there?*

RH: Currently, we are doing a lot of work in the Gulf; the majority is concentrated from our new Abu Dhabi office. But this is also a declining construction market sadly, however, we are always very busy there with new competitions and current projects for the wide range of architects we work with directly.

3DA: *How do you feel the global financial slowdown is affecting the market for architectural visualisation?*

RH: There is no denying the fact that there has definitely been a huge slowdown in this market. This is, however, only really concentrated to the types of projects involving marketing and the developer side of things, which usually have much higher budgets. The good news for us is that the architectural side of things is still booming, with architects tendering for new projects left, right and centre.

J

Amazingly, the visualhouse has never been busier. Because we work on an hourly basis and pride ourselves on having a very fast turnaround on images, it appears we're becoming one of the most effective visualisation solutions for architects.

3DA: *What are the visualhouse's plans and ambitions for the company in the next couple of years?*

RH: Over the next five years, we intend to expand our teams in their current locations, increase our client list to include all of the world's major architects and really work on our overall brand to become renowned as the world's most capable, reliable and effective visualisation company.

I The Leaf for Foster and Partners after post production visual

J American Commerce Centre for Architect KPF cityscape night visual

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» *Monsters vs. Aliens*
DreamWorks' newly released *Monsters vs. Aliens* is the latest foray into enhanced storytelling with stereoscopic 3D
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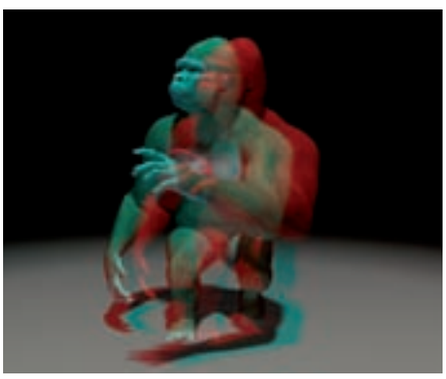
Double vision

3D camera rigs are the new secret weapon in immersive cinematic experience. Mark Bremmer reports



The anaglyph presentation is the result of a two-camera rig with the cameras set apart like eyes. CG allows for perfect camera placement

"Fast-forward to today, and you will discover that three significant changes have culminated in successfully bringing quality 3D to the masses. The first is much-improved optical knowledge for both viewing and producing; the second focuses on robust CG and compositing capabilities, while the third is the conversion of cinemas to 3D-friendly equipment"

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» Jeffrey Katzenberg
DreamWorks Animation standard bearer Jeffrey Katzenberg is one of the biggest proponents of immersive 3D viewing

» *Bolt*
Bolt is a new breed of film that carefully integrates stereoscopic needs from the very start, providing a much more immersive viewing experience
© Disney Enterprises, Inc. All rights reserved

It's only within the last few years that specialised cinematic 3D experiences have been transformed from an awkward novelty into an immersive viewer encounter. Gone are the visually unsettling red-and-blue glasses. Movie patrons are now enveloped in the 3D experience by more advanced polarisation methods that, while still requiring glasses, produce vastly superior results.

Also new to the creation of a quality 3D experience is actually shooting/rendering for 3D production instead of merely repurposing flat 2D footage for 3D effects. While special camera rigs can be built for traditional filming, they are still limited by the constraints of the real world; however, CG is not. Computer graphics have provided new efficiencies and capabilities when producing for immersive 3D, and along with the new capabilities come extra responsibilities for creating first-rate results.

Consequently, the new position of stereoscopic supervisor has been created for movie productions that want to leverage this immersive capability. Recent films like Disney's *Bolt* have taken 3D viewing to a new and story-enhancing level rather than simply using it as a gimmick to periodically throw things at the audience.

Developing 3D

The idea of creating 3D viewing is simple and long known. Take two different images of the same scene from slightly different horizontal angles and only let each of the viewer's eyes see one of the images. Hey presto, you have the illusion of depth. In fact, creating stationary images like this was done in the 1800s, using special viewers that only showed one image to each eye.

However, when you get to movie screens, things get more complicated because you must show both images on the same screen. The traditional anaglyph red-and-blue glasses were created in the Forties to 'hide' left and right images from each eye using colour. This worked but was quite gimmicky, and usually had the viewers leaving the cinema holding their heads from a visually induced headache. The anaglyph method is still used because it is very cost effective for large audiences and, thanks to much-improved production methods, isn't as painful to watch any more. But there is a better way.

Fast-forward to today, and you'll discover that three significant changes have culminated in successfully bringing quality 3D to the masses. First is better optical knowledge for viewing and producing; next is robust CG and compositing capabilities, while the last is cinemas converting to 3D equipment.

As to the first of these changes, the camera rigs are essentially set up like the eyes in your head – left and right. The distance between the two cameras is known as the interaxial distance. Each camera has its own cone or field of view. When both cameras focus at a set distance, this target distance is called the convergence point or plane. For the sake of the 3D effect, everything beyond the convergence plane recedes away from the viewer and everything ahead of it advances toward the viewer.

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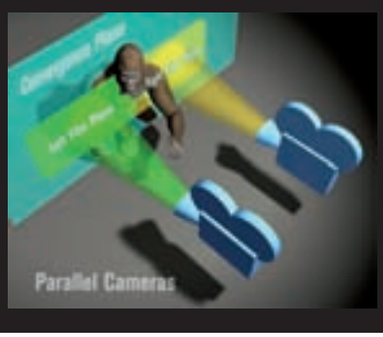
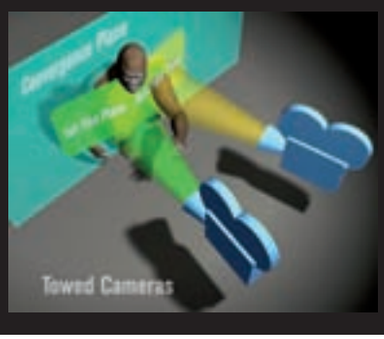
Rigging

Digital camera rigs allow for perfect camera alignment and interaxial spacing that is impossible to achieve with actual cameras for a better viewing experience, as the left-hand diagram shows. This ability greatly increases the control over perceived depth and volume of subjects. Multiple digital camera rigs can finely craft the 3D space with final footage being composited in post-production.

Real camera rigs suffer from slight alignment imperfections. Asymmetric film planes distort perspective, as shown on the right. Because of the physical limitations of real cameras, even with perspective adjusting lenses, there can be slight to significant 2-point perspective shifts that are visually unsettling.





***Bolt* (top)**
Disney's *Bolt* was the opening-night film at the first 3D film festival, 3DX
© Disney Enterprises, Inc. All rights reserved

New technology has fixed a long-standing problem in this method – differently angled or towed camera film planes. When the focal planes are not perfectly parallel, the subjects will slightly keystone or bend inward at the polar top and bottom of the shot. When two images like this are shown, it becomes mildly unsettling to look at. In traditional camera rigs, this is now reduced by using perspective-controlled lenses. In CG, it's a perfect camera adjustment.

While anaglyph glasses are still the mass way to view 3D content, improved methods pioneered by RealD 3D (**www.reald.com**) are quickly being adopted as a standard in cinemas. This polarisation method allows viewers to use passive polarising glasses for image separation, eliminating the colour distortion that anaglyph methods force on viewers. It does require some special projection equipment in addition to the need for viewers to wear glasses. There are other technologies in development that don't require glasses (autostereoscopic) at all. However, the entry price for those technologies is still extremely high for the cinemas since it requires highly specialised – expensive – hardware replacement. 3D movie growth has exploded in the last three years, suggesting autostereoscopic will no doubt become more approachable.

RealD is the current leader in cinematic 3D viewing and projection. Its passive polarised glasses allow a truer viewing experience without compromising colour as the anaglyph glasses do

The world of stereoscopy

Having an emotional connection for entertainment media is a proven generator of cash. Both movies and videogames that offer emotional connections financially far outperform those that do not.

This is where the world of cinematic 3D is making some interesting inroads. Cinematic 3D used to be a cheap trick – make something reach into the audience. The problem is that the items advancing into the audience always had a rather flat, fake, cutout look. Well, this is no more. CG has added a level of sophistication that allows producers to add volume to CG objects, creating a better visual existence in the immersive 3D environments. While not describing exactly how it's done, Robert Neuman, the stereoscopic supervisor of Disney's *Bolt*, says: "We have a tool that allows us

***Monsters vs. Aliens* »**
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Beowulf 3D
Beowulf was one of the many films recent films that was released in both 2D and 3D
© Sony Pictures, All rights reserved

Managing the complexity

Just when you thought you knew everything about CGI, stereoscopic 3D comes along. This new capability requires extra planning to execute well. In fact, Z-Depth is now part of the storyboarding process. The Walt Disney Studios used a stereo viewer with Maya to head off production problems during the development of *Bolt*. To prevent flat 3D effects requires multiple digital camera rigs and additional compositing. Need to know more? Digital Tutors (www.digitaltutors.com) is offering stereoscopic training for Maya and After Effects.

> “No longer does the audience simply observe a flat scene before them – they become part of a real 3D space”

to quantify what we call the roundness of characters specifically, creating good internal volume.” No longer does the audience simply observe a flat scene before them – they become part of a real 3D space. The payoff of 3D immersive viewing is summed up by Jeffrey Katzenberg from DreamWorks Animation: “The D in 3D is not just physical dimensionality, but emotional dimensionality. 3D won’t make a bad movie good, but it can make a great movie incredible.” That sentiment is driving the 3D industry aggressively.

At the time of writing, there are over 70 stereoscopic movies in production worldwide, with Hollywood accounting for about half of those films according to technology consultant Sarah Carroll, who is head of continuous services for Futuresource Consulting.

While CG is a better fit for actual 3D production for technical reasons, the traditional film market is not sitting back and watching all the action. Music group U2 released *U2 3D* in 2008, which has brought in well over ten million US dollars. The Jonas Brothers are currently releasing their 3D concert movie, too.

Recent findings by the industry-respected Screen Digest relates that: “3D screenings have outperformed their 2D counterparts by more than double in attendance rates and over three times in revenue.” It’s this reality that is accelerating not only demand for 3D movies but also the adoption of viewing technology to capitalise on it. Long the bane of cinema owners, digital projection and screens have been held at arm’s length because of retrofitting costs. Called D-cinema systems, these retrofits are occurring at an increasing rate because of the profit involved.

Even the print industry is taking note. A highly specialised process called lenticular printing that allows both the delivery of about ten seconds of video or autostereoscopic 3D is being used for marketing materials worldwide, especially

Sony’s playing around

Apparently, Sony is exploring PS3 titles in stereoscopic presentation. Some keen-eyed CES attendees spotted Criterion Games’ *Burnout* being played during the show...

Sure, we expect to experience 3D viewing in the cinemas, but how about coming from your games console? The 2009 Consumer Electronics Show (CES) allowed Sony to show some 3D gaming in action – but not really. While Sony representatives wouldn’t say that 3D gaming was in development, they didn’t say it wasn’t. On the screens for all to see were versions of popular PS3 gaming titles, like *WipEout HD*, *Gran Turismo 5*, *MotorStorm* and *Burnout*. Monitors to play 3D games on already exist from vendors like from iz3D. Not big enough for you? Mitsubishi has models up to 73 inches.

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Monsters vs. Aliens
Over 2,000 3D-friendly screens will be showing DreamWorks Animation's *Monsters vs. Aliens*
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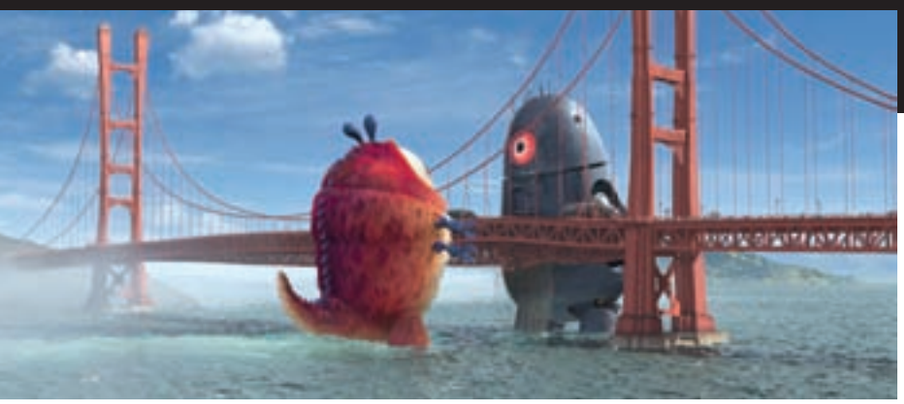

» *Avatar*
James Cameron's *Avatar* will be released in IMAX theatres
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« *Monsters vs. Aliens*
DreamWorks Animation. All rights reserved

in movie cinemas. Particularly suited to the print industry is anaglyph printing, which has spawned novel and exciting billboards and displays at trade shows, all requiring the use of red-and-blue glasses. Companies like Big3D (**www.big3d.com**) show excellent examples of the 3D range in printed form.

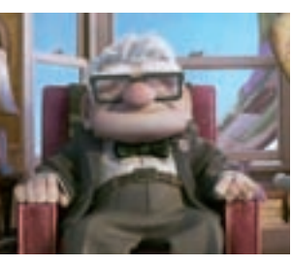
One of the most significant catalysts in technology development and adoption is the multibillion-dollar gaming industry. Companies like iz3D (**www.iz3d.com**) already have 22-inch monitors for a very modest sum that enable users to play an expanding catalogue of 3D-compliant games using polarising glasses. NVIDIA (**www.nvidia.com**) and other computer video card manufacturers are developing enhanced support for both stereoscopic and autostereoscopic solutions. At January's Consumer Electronics show, Sony displayed a new 3D television that uses RealD's technology for gameplay on the PS3. Levi Buchanan, IGN Entertainment attendee at CES, summed up it, as he said: "If deployed properly inside games as a way to enhance the immersion, such as *MotorStorm*'s depth of field, this could be an exciting selling point for the PS3 in the future."

The future of 3D CGI

The sun is beginning to crest the horizon in the dawn of cinematic 3D, but not without the requisite storm clouds, and they would be standardisation. For 3D artists, the methods of 3D creation will continue to mature but are solid because it's based upon fundamental principles that aren't going to change. Not so with delivery. 3D generates more content and more content requires more storage space and bandwidth.

In order to turn around falling DVD sales and capitalise on emerging 3D TVs, there is about a ten-year or less window to leverage Blu-ray. The blossoming content size for 3D takes up 35 per cent to 200 per cent more room than a typical Blu-ray title. And this is just for the current passive polarisation option from RealD. However, it's expected that autostereoscopic 3D will overtake the current glasses-wearing stereoscopic viewing in about a decade. If Moore's Law is correct, then it will probably be sooner than that.

Senior technology consultant for Futuresource, Bill Foster says: "Certain studios had reasons for wanting Blu-ray, because they were already thinking about 3D. But there has to be some technology standard. You just can't have anarchy."



Up
Disney's 3D film *Up* is going to open the Cannes Film Festival
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» *Journey to the Center of the Earth*
This movie had an excellent second run as a 3D feature film
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Links to the community

There are many 3D communities, including...

http://marketsaw.blogspot.com
http://www.3djournal.com
http://www.siggraph.org
http://usa.autodesk.com
http://www.stereo3d.com
http://www.3alitydigital.com
http://www.mtbs3d.com
http://www.poc.com

> "The industry is embracing new technology in the same way the music industry approached MP3 capabilities"

High definition delivered via Blu-ray was seen as a way to reverse declining DVD sales. Now the hope is that 3D will provide an additional assist. The studio's current business model is still to deliver hard product for profit. And why not? Disney's *Hannah Montana/Miley Cyrus: Best of Both Worlds Concert Tour* pulled in over $70 million since its release in cinemas. That fanbase can translate directly into DVD sales.

In its report 3D in the Home: Market Forecast and Assessment, Screen Digest believes that the adoption curve for 3D-capable displays will be determined by standardisation efforts for the content delivery and compression. And, as if echoing the Sony position at the 2009 CES, "the prevalence of early adopters in games market means 3D games may arrive in the home sooner than 3D movies or TV programming."

This industry is leading the charge in purveying 3D and creating expectations for it. But the cinematic industry is a behemoth, embracing new technology much in the same way the music industry approached MP3 capabilities. It's just that the ability to make money from 3D isn't quite as abstract as it was for MP3s.

Screen Digest

Screen Digest offers key findings in its March 2009 report:

- Overall, 3D content will be slow to proliferate due to the size of the addressable market and the incremental production costs associated with 3D, as well as the requirement for the industry to learn a new visual vocabulary
- By extending the 3D premium established in the theatrical market across other distribution platforms, the industry will create an opportunity to generate incremental revenue
- For 3D artists, it's time to put on some suntan lotion and get ready for the full force of the three-dimensional daylight

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Duncan Evans talks to Pete Farrer and Antony Carysforth of Red Vision about producing cutting-edge CGI technology on TV studio budgets

Seeing Red

B

Company Red Vision
Founded 1996
Company website www.redvision.co.uk
Country UK
Software used Maya, 3ds Max, Red Vision, Infinite Wave
Expertise Art, CGI
Client list *Battlefield Britain, Headcases, Ocean Odyssey, San Francisco – Living the Quake, Superstorm, The Great Sperm Race, Titanic – Birth of a Legend*

> "The challenge for Red Vision was to evolve a production process for the animation that delivered a distinctive high-end animated character style within the very tight deadlines required"

Pete Farrer chief creative officer at Red Vision on delivering animation for TV show *Headcases*

It was back in 1996 when Pete Farrer, currently the chief creative officer at Red Vision, decided to form the company with a core of technical and creative directors, who also happened to be his close friends. They opened an office in Canal Street, Manchester, where they were based for ten years before recently moving to a newly converted Victorian schoolhouse near Manchester's Northern Quarter. The studio includes custom-built edit suites, meeting rooms, staff chill-out areas and is a great light space in which to work. The boardroom is at the top of the building, complete with roof terrace and fantastic views of the city.

Red Vision built a reputation as one of the top broadcast computer graphic imagery and visual effects studios in the UK. The company is also the creator and innovator of new techniques and innovations in CGI, with such technologies as Red Legion for large crowds and Infinite Wave for realistic seas. Red Vision also pioneered the use of CGI in the most challenging areas of drama documentary, film and event reconstruction for producers worldwide.

3D Artist: *You were one of the first to introduce realistic virtual characters in a documentary with* Death on the Nile *(broadcast in 1998). How sophisticated was the software available at the time and how much custom programming did it involve?*
Pete Farrer: This was one of our first jobs. We were using 3ds Max and the tools were fairly limited. *Death on the Nile* was mostly low-resolution instanced geometry, animated using a handful of different cycles. All of the programming was bespoke for the job – one of our founder directors wrote all of the necessary programming.

3DA: *The work on* Battlefield Britain *won you a BAFTA for Visual Effects in 2005, but Red Legion has developed since then. What*

A

A The reception to *Headcases* has been extremely positive. ITV has had interest from America, Europe and India, so hopefully some international versions will be produced in the near future

B One challenge for Red Vision was to evolve a production process that delivered a distinctive high-end animated character style within the very tight deadlines required to allow topical editorial to be delivered within the week

C The firm currently employs 45 people; however, the projects in the pipeline for this year mean that Red Vision will be taking on a further 80-120 artists

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can you tell us about the capabilities of the software and the situations, detail and numbers it can now handle?

AC: In addition to armies and the like, the software has had some enhancements that allow it to handle insects and animals. There's also been some development on the rendering aspects, such as the ability to attach animated displacement textures to animation cycles so that moving cloth-like objects look more detailed without the need for heavy geometry. In terms of numbers, we've had it solving tens of thousands of characters before now. Also, there's been lots of tweaking over the years, so it's about ten times faster now than it was on the first *Battlefield Britain* series!

3DA: *Weta Studios developed the Massive software system for controlling and animating large armies for* Lord of the Rings*, but then developed it further and released it as a standalone software solution. Can you see the same thing happening with Red Legion?*

AC: Selling Red Legion has been discussed in the past, however, it's very much a production tool as opposed to a piece of software for the end user, therefore it'd be tricky to try and shrink-wrap it. The setup and preparation time for any kind of system like that is fairly intense – it's hard to get started until you have a whole bunch of characters modelled and rigged at different resolutions, plus animation or motion capture cycles to drive those characters. Also, Red Legion is very tied to RenderMan for the rendering side of things, which was an issue in the past from a commercial point of view. RenderMan is a lot more accessible these days, though, so perhaps it would be okay. Never say never, though – perhaps sometime in the future we'll take another look at turning it into a commercial product.

C

3DA: *This theme of creating your own software solutions continued with Infinite Wave, used for the impressive ocean shots in* Superstorm*, the 2006 Emmy-nominated* Ocean Odyssey *and* Krakatoa*. What can you tell us about how Infinite Wave was developed and what it's capable of?*

AC: In many ways, Infinite Wave was similar in spirit to Red Legion. But instead of rendering huge numbers of characters, we needed to simulate and render even bigger numbers of particles. So we basically came up with a set of tools that gave us the ability to render hundreds of millions of them. That was all inside of Maya so integrates smoothly with all the regular aspects of a production. Infinite Wave is really three separate tools: one for generating the ocean surface (with lots of artist control), a handful of plug-in emitters to help generate foam, splashes and spray, and then a bunch of plug-ins and shaders for RenderMan.

3DA: *What software does Red Vision use and why that compared to the alternatives?*

D

> "Selling Red Legion has been discussed, however, it's very much a production tool, not a piece of software for the end user"

F

D Red Legion is a production tool that works with the Red Vision pipeline. Here it was used to control and move

E Antony Carysforth, head of R&D at Red Vision

F One of Red Vision's senior animators created a nifty face rig that could drive any lead character, so the company created only a single face rig for the whole of Headcases

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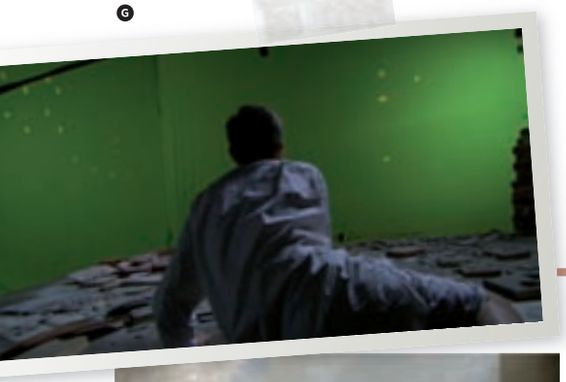

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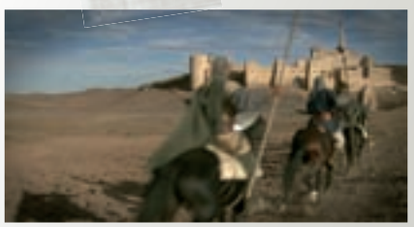

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AC: Maya is used for the majority of things at Red Vision nowadays. We still use 3ds Max occasionally, but Maya is just easier to pipeline on larger shows. Also, utilising RenderMan from 3ds Max has always been difficult, which is a shame really.

We're also in the process of rolling out an entirely new CGI pipeline based on a product from US company Temerity (www.temerity.us). It has developed an application called Pipeline, which offers a node-based approach to authoring an entire studio pipeline. It's very intuitive and cool because many artists and technical directors are already familiar with working with node-based applications, such as Maya and Shake, but then we had to completely customise it in-house for a workflow that is more suitable for TV and the maverick nature in which we like to operate.

3DA: *Last year you signed up to do the graphics for* Headcases*, which most people were expecting to be a CGI version of* Spitting Image. *Give us an idea of the creative process that went into the character design to start with. Were you involved with this or did initial concepts come from the writing side? How did the modelling for the characters go? Were there problems or disagreements with how each character should be stylised?*

PF: We started out mainly going down the *Spitting Image* route and based our designs in the same vein, however, when we had produced some of the longer-form sketches, we realised that we were not taking full advantage of making it in CG. This was a big turn, and when we introduced characters like Amy Winehouse and Boris Johnson (the dog), we started to evolve our own identity.

Using a unique blend of performance capture, keyframe animation and a specially developed animation production pipeline, a significant proportion of each show was created and delivered within three days of each transmission. We created more than 108 celebrity alter egos for the

G Over 600 shots were completed for the whole series of Battlefield Britain. The client was keen to see the size of all the various armies represented as accurately as possible

H The original version of Red Legion was quite crude in comparison to what the system can do now. Here, an army is not only more varied and detailed than before, but they can race over uneven or steep landscapes

I *San Francisco – Living the Quake*. This TV programme mixed documentary commentary and dramatisation to retell the story of the 1906 earthquake and fire that nearly destroyed the city of San Francisco

J Red Vision undertook the special effects shots for the 2006 programme, which was the 100th anniversary of the largest quake to ever hit an American city. Green-screen techniques were used to mix live-action actors with CGI scenes of destruction

K *The Great Sperm Race* (2003). The programme looked at new findings in evolutionary biology, suggesting the female is as promiscuous as the male. Red Vision created scenes featuring hundreds of sperm-like people

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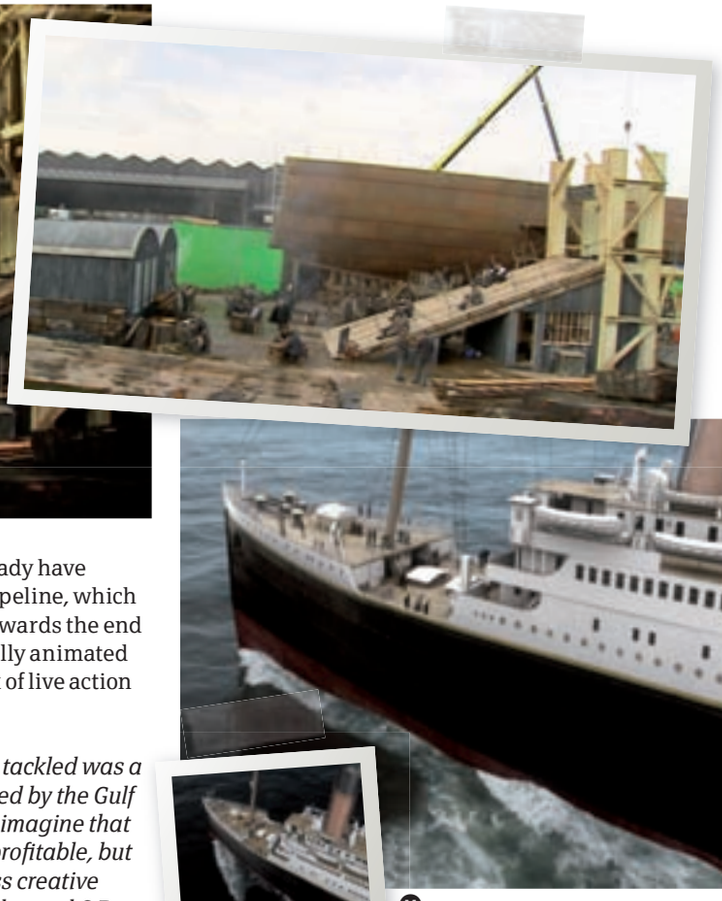

L

series, each existing in a world of visually stunning digital locations and situations. The series was the result of a complete collaboration and everyone from the executive producer to the runners were involved. Red Vision also pioneered the use of Pixar's RenderMan technology in a UK television series.

3DA: *What was the time schedule to create each episode and what problems did this bring, considering you were lighting and animating everything in 3D?*
AC: We produced just under three hours of animation for *Headcases* in around eight months, which was around 2,000 shots in total. There were a large number of hero characters, which made things tricky given the relatively short production schedule. It was quite intense, as we didn't start lighting the shots until about five weeks before the first episode was broadcast.

3DA: *Red Vision has been mainly focused on TV work, but you have a subsidiary called Film Red. VFX for films can be tremendously resource-hungry in terms of people and hardware, so what level of film work are you looking at here?*
PF: We are delighted that Stephen Coren is now Red Vision's head of visual effects. Stephen was VFX supervisor on *Lord of the Rings, The Return of the King* and also *300*, among many more high-profile feature films. His considerable reputation means that we will be able to further develop our subsidiary Film Red. We already have several film projects in our pipeline, which we will start in production towards the end of the year. One project is a fully animated feature, but the other is a mix of live action and VFX.

3DA: *One of the projects you tackled was a corporate video, commissioned by the Gulf Aircraft Partnership. I would imagine that this kind of project is highly profitable, but does it entail significantly less creative freedom compared to TV or film work? Do you see Red Vision either moving more in this direction, or perhaps launching a subdivision for it?*
PF: We had plenty of creative freedom – we had a very good working relationship with the client. We do not see Red Vision moving more in this direction in the immediate future, as we have a lot of other projects we wish to concentrate on at the moment.

> "We have always excelled in science and documentary work, however, we are open to all types of CG and VFX work"

3DA: *In 2006, you created the advert for* Mortal Kombat: Deception. *That seemed to be a step outside your normal comfort zone. Why did you decide to get involved with this? Also, game cinematics are always in demand, so do you see Red Vision taking on that kind of work?*
PF: Nothing is outside our comfort zone. We always like to satisfy our artists' creative ambitions and they said they wanted to do the work, so we let them! It was a great experience for all involved, but we have moved on now.

3DA: *Has the current global financial meltdown affected VFX work and commissions? Are people being more careful with their budgets and in turn demanding 'more bang for the buck', as the phrase goes?*
PF: Although the global financial meltdown has not helped, we have been working under budget constraints for many years! Television budgets have always been extremely tight and Red Vision has a reputation for making the most of our clients' budgets.

3DA: *So, looking to the future, what kind of project would you love to get involved with?*
PF: We have always excelled in science and documentary work, however, we are open to all types of CG and VFX work. We have been in discussions with many drama producers as well as animated feature production companies. The talent base of Red Vision is always opening up new possibilities as and when the artists express a desire to do something completely and utterly different.

L During *Titanic: Birth of a Legend*, there wasn't much of an issue with comparing it to the film. They were coming from very different angles, and the client was going for something a little less nostalgic than James Cameron's version

M Red Vision completed over 350 shots for *Titanic: Birth of a Legend* in the end. A lot of effort went into the ocean surface and the wake generated by the ship. Most of the shots of the ship at sea were done in 3ds Max

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Create a realistic garage scene

Go for speed 2009

> The realistic effect of the garage looks like it has been painted by hand, but is actually rendered in 3D

Wen Lin is an enthusiast who loves both hand-painting and 3D animation

behind the scenes

3D artists explain the techniques behind their amazing artwork

Artist info

Wen Lin

Personal portfolio site http://coolen007.cgsociety.org/gallery/

Country China

Software used Maya 2008, mental ray, Photoshop CS3, Combustion 4

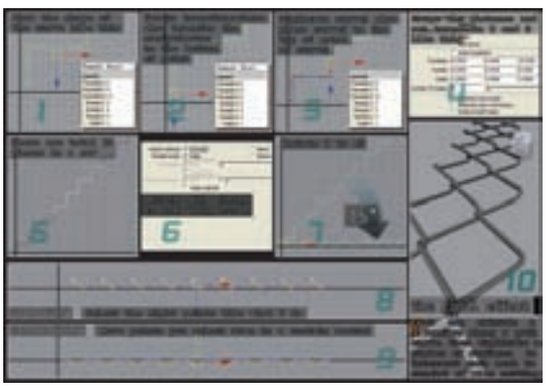
Expertise Design, modelling, texture, lighting, composing

This tutorial will show you how to create a realistic scene in Maya and will then take you through a step-by-step guide to producing a hand-painted look in Photoshop CS3, so you'll have an advantage if you have basic painting skills. Although the lack of space prevents us from giving car models the full treatment, this walkthrough will go over the essential process of making a piece of wire netting. Additionally, you will learn how to set Global Illumination option, including introducing techniques of photons and Final Gathering to generate a satisfactory result of Maya in mental ray.

01 Create wire netting

If you create too many wire nettings, Maya may not be able to cope and it can cause the system to slow right down. To create the right amount of wire netting models, you need a close shoot. If its position is too far from the shoot, try making a plane and assigning the wire netting's texture to it with an Alpha channel of the wire netting's shape set to Transparence in the material's attribute A.

When you draw the shape of the curve, don't forget to hold the X key for the Snap To Grids command. When you want to transfer the manipulator to where you want it, press Insert to switch to Pivot Point mode and hit X, C (Snap To Curves) or V (Snap To Points) to where you earmarked. Once you're sure of its position, press Insert again to switch the manipulator back to Normal mode. If you encounter some transformation errors, don't forget to delete the history (Edit>Delete by Type>History).



A The 10 steps in the screenshot follow the process of creating a perfect wire netting

Concept to…

The idea behind the image was to create the kind of urban race cars found in Need for Speed or Fast and Furious, set inside a garage. The first task was to create a sketch showing the composition

Wireframe

The scene was blocked out quite roughly to start with, just to fill the spaces. Then it was developed with each part in turn until all the cars and the scene were fully modelled and in position

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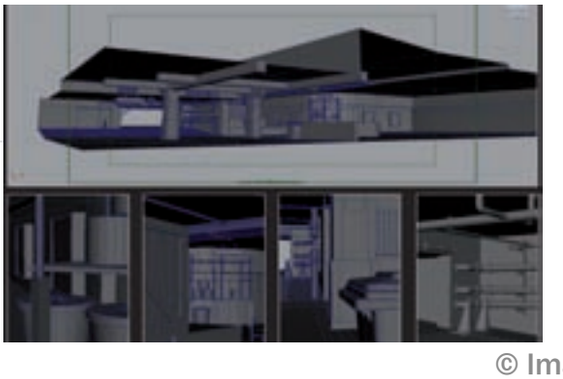
Lighting, rendering and post production

02 Set Global Illumination for the interior

Moving on, we will create a Directional Light to generate the shadow that's similar to sunlight, as well as three Area Lights with emitting photons to illuminate the whole scene B.

Start with setting the Render Using to Mental Ray and uncheck Enable Default Lighting, then open up the Render Options and under the Common section, go to the bottom. Create one Directional Light and three Area Lights to light up the scene, and then it's time to set up Global Illumination. Go to the Attribute Editor of the Area Lights and in the Mental Ray>Caustics and Global Illumination section, turn on Emit Photons. Also, in Render Settings (MentalRay)>mentalray Options>Caustics and Global Illumination, turn on Global Illum. Set the Intensity value to 0 for all three Area Lights, as we're just using them to produce a number of photons but not for direct illumination. Then create a plane with an image as a temporary background and go to its Render Stats. Also uncheck its Casts Shadows, Receive Shadows, Visible In Reflections and Visible In Refractions, then rename your lights and objects.

Now let's test some GI solutions. There are three important options from Area Light: Photons Intensity (referred to as PI), Exponent (referred to as Exp) and Global Illum Photons (referred to as GIP). From Render Settings,



B Here are several views of the scene from different angles. The more photons you use, the more quality you gain, but it slows down the rendering speed

> "Although the lack of space prevents us from giving car models the full treatment, this walkthrough will go over the essential process of making a piece of wire netting"

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there are two important options: Accuracy and Global Illum Radius (mental ray).

03 Use Final Gathering with GI

After we finished setting up GI, we have to use Final Gathering (referred to as FG) to acquire the best illumination. First, go to the mentalray Options in the Render Settings (MentalRay). Open the Final Gathering section and turn on the Final Gathering option. There are three important options we must know in this section, and they are FG Accuracy, Min Radius and Max Radius. All three options have an awful lot of impact on render time.

FG Accuracy is the amount of rays hit at the scene to estimate the value of the FG. Min Radius and Max Radius will collect sampling information from the surrounding light. It will generate more details and perfect the rendering of your image. You can calculate the values of the two, which is based on scene units, by Measure Tools (Create>Measure Tools>Distance Tool). The general rule is that the Maximum Radius should be set at the 5-10% range of the scene's size (in Maya Units); the Min Radius should be set at 10% of the Maximum Radius C.

Design the textures

Designing the textures and materials is a very important part of the process. You should form a colour scheme based on the different levels of hue and saturation that are present. In this particular scene, we're using a main tone of yellow and green on the garage.

C (left) Some blurry noises cleared away after adding FG. The scene is shinier than the old one, which is acceptable, but the rendering time raised to 39:33. This is only a scene without any textures, so if your textures are very large, it will spend more time than the one without any textures

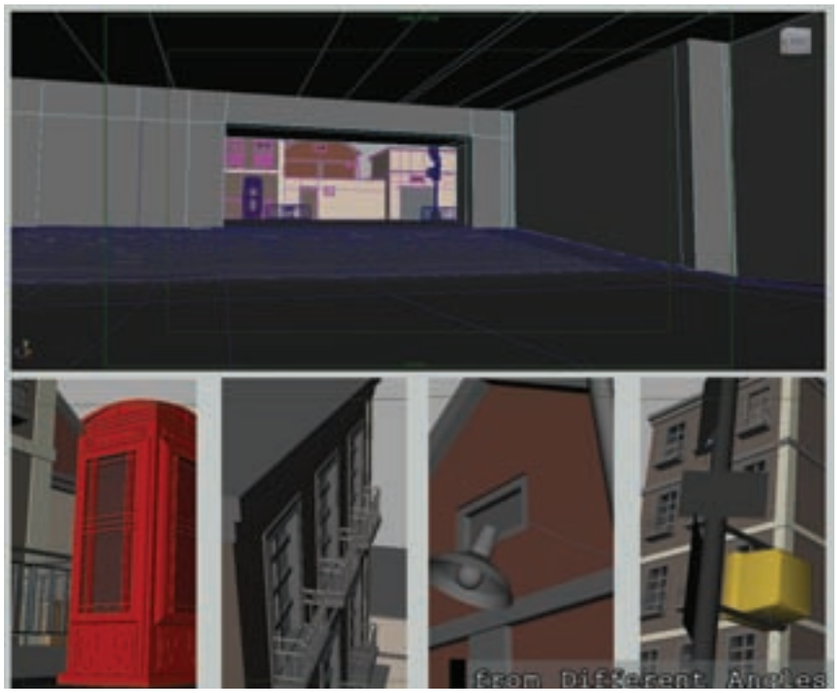
04 Design textures and materials

In order to assign a Normal map to a shader in Maya, create a File node from 2D textures, click over it to open up its Attribute Editor and add a Normal map to the image name. After this is done, click over the material you want to add a Normal map to and open up its Attribute Editor, then drag that File node to Bump Mapping. At the same time its 2D Bump Attributes will pop up, so select Tangent Space Normals in Use As D.

05 Set Physical Sun and Sky for exterior

We're using Physical Sun and Sky to light up this exterior, because if we used GI with FG to render this scene, it would definitely take more time to complete E.

First off, make sure you have chosen mental ray as your renderer. Roll down until you see the Environment tag, then click on Create near Physical Sun and Sky. Maya will generate a Directional Light, which is centred at the world origin, and pop up the Light Attributes. Move the light to where you want and rotate it to a suitable angle to illuminate the whole exterior (all the options are default). Assign colourful materials to the models and check Final Gathering, set the Accuracy to 200, then assign a new lambert to the foreground of the garage, which will be invisible. Open up the Matte Opacity and set the Matte Opacity mode to Black Hole, which takes the visibility off when you render it.



E (above) The environment ought to have suitable shadow and diffuse areas, with textures to be added afterwards in Photoshop

D This screenshot shows a final test image at 25 per cent of the full resolution and all of the options of GI and FG

06 Adjust the Displacement for tyres

First, assign a new blind to the tyre mesh and create a file texture for Displacement. Second of all, in File Attribute, open up Color Balance and set Alpha Gain to 0.06. Next, click on Windows from the main menu and follow Window>Rendering Editors>mental ray>Approximation Editor. Under the Displacement Tessellation section, you will see Displacement, derive from Maya, then click the Create button. Now when you create, the Attribute Editor for mentalrayDisplaceApprox2 pops up. Under the Displace Tessellation Quality, change Presets (Custom) to Fine View

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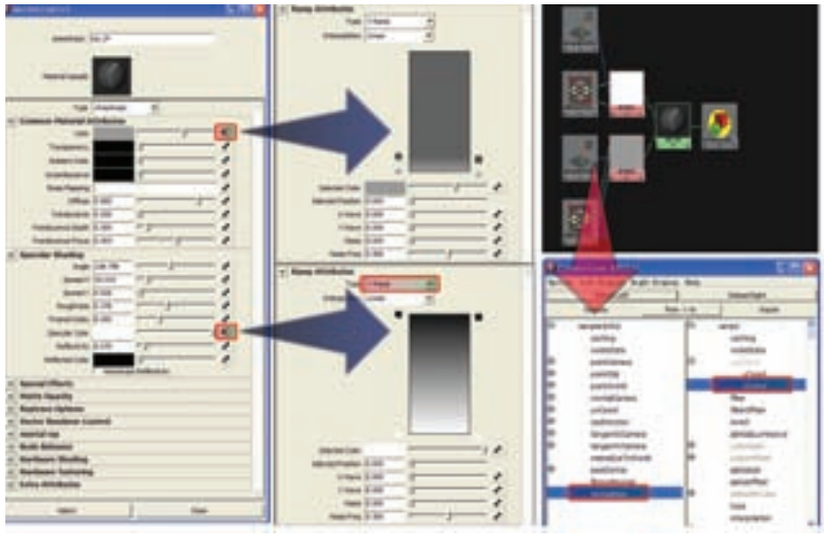


F Connect a Noise node in order to simulate dirt on the tyre. It will take patience while fine-tuning the various materials' settings until you are content with them

High Quality. After you've done this, a few options below the presets will not be greyed out any more. As you can see, there are two very important options: Min Subdivisions (the default value is 0) and Max Subdivisions (the default value is 7). Increasing Min Subdivisions can make the displacement effect more visible – try setting the value somewhere around 7. To achieve a higher quality, select the tyre mesh and press Ctrl+A. After the Attribute Editor pops up, under the Shape tag go to Tessellation>Simple Tessellation Options and then change Curvature Tolerance to Highest Quality. Increase both U Divisions Factor and V Divisions Factor to somewhere around 8 and you will get a more precise displacement effect. Finally, set the options to blind to make it look more like the material of a tyre. You will then be able to apply this effect onto the tyre.

07 Create the materials for cars

Create a new material and assign it to the car body. We're using Anisotropic as the main material of the car's body, which is a specific setting F. Next, connect a Sampler Info node to two Ramp nodes, and then connect both Ramp nodes to Anisotropy's Color and Specular Color differently. This will simulate a self-luminescence around the border of the object, which will generate a more realistic effect.

08 Render cars in mental ray

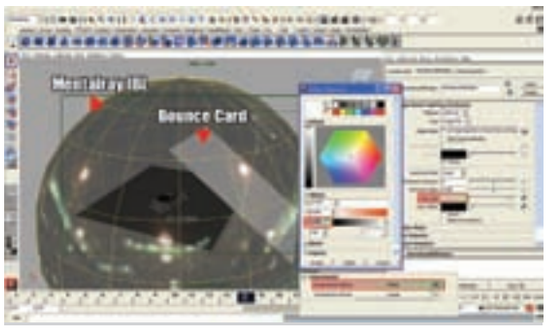
As we're using HDRI to render cars, this step will lead you through setting the HDRI options to render the middle of the car in the scene G.

Roll down until you see the Environment tag in mental ray's Render Settings, then click on the Create button near Image Based Lighting. A sphere will be generated at the world origin. Scale the sphere up to surround all the objects, then add a file texture to it. The best file format is HDR. Note that if your HDRI file type was Latitude/Longitude, you would select Spherical in Mapping, while if your HDRI file type was Mirrored Ball, you would select Angular in Mapping. If your HDR texture can't light up the whole scene enough, go to Image Based Lighting Attributes where you will find Color Gain. Click on the white colour in the Color Chooser and increase the V value to something like 2, 3 or 4 under the Sliders section. This will result in a greater amount of illumination.

09 Set an Ambient Occlusion pass

Ambient Occlusion can be used to make your image more realistic and enhance the details of shadows.

First, switch Display to Render Layer in the Layer Editor. Select the objects you want to render and a plane as the ground, then click on to create a new layer and assign



G Create some bounced cards, a form of additional lighting, to illuminate the scene another way

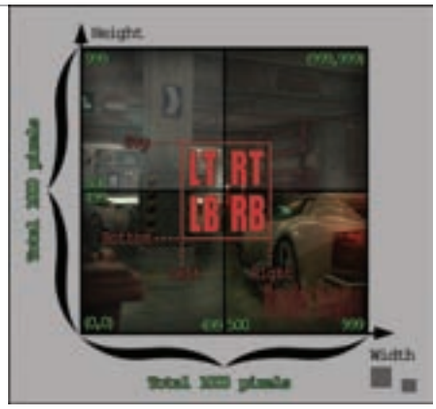
selected objects into it. Aiming at the new layer, hold the right mouse button and select Presets>Occlusion. The selected objects will then be coloured black. Select the discretionary object, go to its uniform Surface Shader Attribute Editor where you will see Out Color in the Surface Shader Attributes. Click the arrow for the mib_amb_occlusion attribute, then change the Sample value to 100. Set the Spread to 0.8 and set the Max Distance to 30 H.

H We rendered the image without Final Gathering, and the rendering speed was faster

Split the image for rendering

You may well find yourself asking why we need to split the image into several chunks. Well, large images require a solution like this because of memory limitations. After that, you just need to sew all the completions together to compose a complete image in Adobe Photoshop.

As a rule, we want to split the image into four equal sections. To calculate these four sections of the region, you must follow the order of left, right, bottom and top. You will be able to calculate the effective region from (0,0) to ((Width-1) (Height-1)).



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10 Make an Alpha pass work on a Color pass

Open both a Color pass and an Alpha pass in Photoshop, then select the Move tool. Press Ctrl+Shift+A and drag the Alpha pass over to the Color pass. To make sure the Alpha pass fits above the Color pass and covers it, you could close the eye of the Alpha pass and switch from Layers to Channels. Select the blue channel and duplicate it as an Alpha channel. Bear in mind that what you get rid of must be black, and what remains must be write. Hold Ctrl, aim at the blue copy (renamed to 'Alpha') and right-click it or press Ctrl+Shift+D. Loading the selection in this way, you can choose to invert it and get rid of what you don't need I.

Alternatively, open one Color pass and one Alpha pass in Photoshop. You must link the Alpha pass with the Alpha channel. If this isn't the case, then repeat the process in the first technique, starting at switching to Channels from Layers. Select the layer of the Color pass that you want by choosing Select>Load Selection. Set the Document to your Alpha pass, while Channel ought to point at the Alpha channel of the Alpha pass. Once the selection appears, select the Rectangular Marquee tool and click the right mouse button on it, choosing Save Selection to save as its Alpha channel. If a black fringe (which may be generated by a black background) clings to the edge of the object, you can tighten the edge by following Layer>Matting>Remove Black Matte.

11 Compose multiple layers in Photoshop

We now need to compose all of the passes in Photoshop. The main direct composing passes include the Color pass, the Ambient Occlusion pass, the Diffusion pass, the Reflection pass, the Specular pass and the Shadow pass.

J The question is, which blending mode is best suited to the scene? If time permits, you could try every blend mode to look at each different effect on a subjacent layer

Each of these passes can overlay with blending modes in order. The main indirect composing passes include the Alpha pass, Z-Depth pass and the Motion Vectors pass, which have to be worked with in a particular operation J.

This is just a simple flow demonstrating how to compose multiple layers. If you have a layer with the Occlusion pass, choose the Multiply blending mode above Color pass to add shadow details. If you have a layer that looks like it is glowing, choose the Screen blending mode to overlay it, which will help you to gain a good shining effect. If you have a layer with the Reflection pass, use the Color Dodge blending mode to achieve a natural look, while the black background will also be invisible.

> "The layer mask is one of the most powerful weapons in Photoshop. Essentially, they can partially or fully reveal all of the image behind it"

I If you want to make an Alpha pass work on a Color pass, you will need to get rid of whatever you don't need for revealing subjacent layers

12 Use layer masks to achieve nondestructive editing

The layer mask is one of the most powerful weapons in Photoshop. Essentially, they can partially or fully reveal all of the image behind it. The biggest advantage of this is that if you think the use of layer masks isn't great somewhere, you can permanently edit it under the nondestructive editing area. Another key point is that you can draw a semitransparent picture, which can make this layer partially transparency rather than fully. When you feel the layer masks are perfect, you can merge them within the layer K. The colour white will reveal the image below, whereas black will hide the image below. Simply hit the X key to quickly switch between white and black, as the foreground colour is white and background colour is black or the opposite state.

Control layers

To get a better effect from each blending mode, you can control the opacity of the layers by reducing or increasing its value. If the layer with the blending mode applied to it is not clearly visible, you could duplicate this layer several times until you are satisfied.

13 Duplicate layer masks to apply on other layers

Start off by selecting the layer mask of the netting1_colour layer. Look at the eye in front of the green area. Aiming at its

K This explains the functions of layer masks in terms of wanting to get rid of the area of netting1 in front of the pillar

layer mask, hold down Alt and grab the right mouse button, dragging it to netting1_occ (or whatever layers you want to apply the layer mask to), then release the button.

14 Patching and composing the main textures

As you look at the final image of the 3D rendering back from Step 5, you may be wondering how to achieve the effects of

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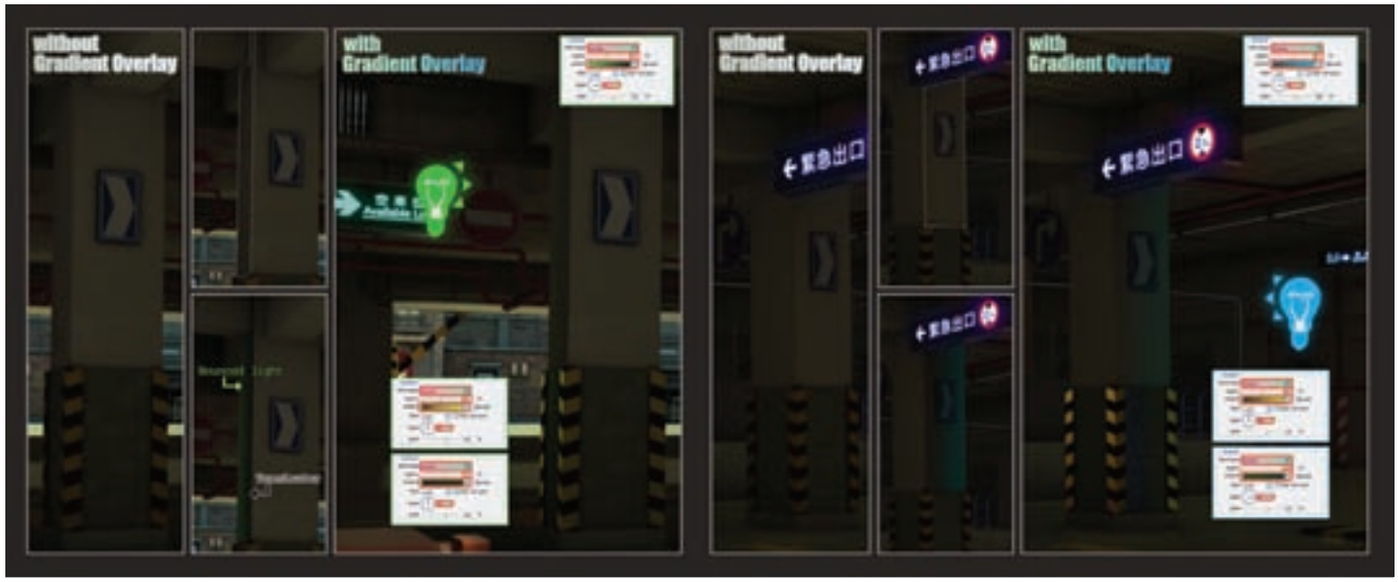

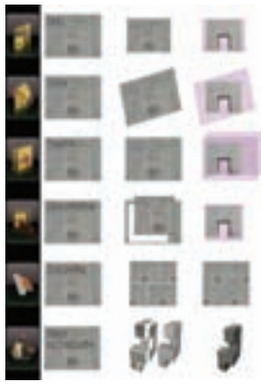

L There are several ways to process the textures, including simply posting them where you want. It is essential to collect many of the various textures

Global Illumination

Global Illumination is meant to add more realistic lighting to your scenes. It is a form of indirect illumination. The distinction between direct and indirect illumination is whether the light rays from the light resource are reflected or refracted by other surfaces in the scene. Therefore you would get the more realistically illuminated scene if the algorithms model diffuse interreflection and caustics, which are the important parts of Global Illumination. This particular scene doesn't need caustics. We want an approximate realism of reflection and shadow but not an absolute one, as this is not an interior-decorated view made by realistic renderers such as V-Ray, Maxwell or any others. The scene will use Global Illumination (referred to as GI) in mental ray.

the second image. Compared to the second image, the first one is really blank. Here, we will show you how to achieve these effects L.

The first thing to do is to imagine a final effect you want, which overlays the textures afterwards. Compared to the original exterior, we're after a more illuminating environment, with much finer details of textures and a sense of visible sunlight. After you have got this image in your head, start to adjust the colour and brightness for the exterior.

After you're done, look around for some textures that will fit your scene. It helps to catalogue all of the textures in order to save time spent on searching, with categories such as metal, wood, stone, wall, res, bricks and so on.

Pick some textures that fit the exterior, then erase the unnecessary areas with an Eraser or layer masks. Note that if the textures you want to include are not in the desired tone, you have to adjust their colour, hue, brightness and contrast to match your tone, otherwise the effect with overlaying textures will not good enough. We need to overlay textures in Photoshop because what we have produced is a still frame without any movement, and this way you can add whatever textures to your work in Photoshop depending on your experience and the final effect you want. In order to overlay textures to the image, you can set the layer to an Overlay blending mode and set a reasonable opacity if the effects are very intense.

15 Use Layer Styles to brighten or darken your scene

When you finish rendering, the resulting Color pass, Occlusion pass and any others will overlay each other in Photoshop. Look to see if any areas appear unreal. This would mean that some areas are too bright and some too dark, because some details are invisible. We need to fix up these problems for a better effect.

Bring up the image without the textures, and you will see the differences. Use Adjustment to adjust Levels, Hue/Saturation, Curves, Brightness/Contrast and the like. When you save and close the file, you can't revert back to the original image, so we're working in a nondestructive editing environment.

In order to light up the areas that you want, use the Rectangular Marquee tool, Lasso tool or Pen tool to create the selections you want to process. If you choose the Pen tool, click on the right mouse button and choose Save Selection. You will then see these selections around the white circles above. After you've created a new layer, fill these selections with any colour. Double-click on these layers' thumbnails to open up the Layer Style dialog box. In the Default Blending options, set Fill Opacity to 0 under Advanced Blending. After you've done that, the coloured selection will disappear. Don't worry about it, as you can check Color Overlay in Styles. Right now, the selection will appear in a predefined red colour. To brighten, change the blending mode to Color Dodge then go to the Color Overlay's colour picker and set a lighter colour, such as light red, light blue or light green. You can also see the result with Color Overlay in real-time on the canvas, with more details showing up. Cycle through the colours until you get the best effect. To darken, change the blending mode to Multiply. Then go to its colour picker and set a slightly dark colour. Look at the result with Color Overlay in real-time on the canvas until you get the best effect.

M We could exaggerate things by suggesting that the electronic indicators emit green rays and hit the pillar, as well as a bit of light from the open air

16 Use Layer Styles to create a more natural look

In this work, we want to add some effects of the terminators and bounced lights over the pillars to simulate a light effect on those objects along the borders. So the pillar's side closest to the electronic indicators and open air will have slightly yellow/green rays. There is a blue light on the other side of the garage. We could continue the theme of exaggeration by supposing that the light emits blue rays, hitting the objects. Thus, the other pillar's side will have slightly blue rays M.

Now let's move on to use Layer Styles and a Gradient Overlay to make the scene look more real. Use the Pen tool to create the selections you want to process and save the selection. After you've created a new layer, fill the selections with any colour. Double-click this layer and then go to the Layer Style menu. In Blending options: Default, set Fill Opacity to 0 under the Advanced Blending section and check Gradient Overlay in Styles. Then the selection will appear as a predefined gradient.

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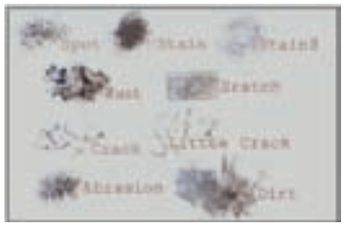
Next, open up the Gradient Editor's dialog box. Set Angle to 0 so it makes the gradient shape vertical with the horizontal line. Switch to the Overlay blending mode, select the market for the colour stop at the bottom left and click over this market to set the colour you want. Set the light in a yellow/green colour in order to simulate the bounced light effect, then click OK. Select the market for the colour stop at the bottom right and set the colour to dark grey in order to simulate the terminator effect.

17 More natural looks

The Gradient Overlay blending mode is a powerful weapon. Its function is the same as the Color Overlay, but the Color Overlay is used to adjust the whole tone (N). In this step, use the Layer Styles for the footage with the Gradient Overlay blending mode to create a better look for the wire nettings. To do this, follow the instructions from the previous step, but don't create a new layer, directly double-click the footage layer and choose Gradient Overlay. Set the Fill Opacity to 0 and rotate the Angle for a better look.

18 Use various brushes to paint the details of the aging kit

Use a digital pen to paint on the digital tablets to create interesting effects. We need some special brushes and our painting acquirement for this. There are nine special brushes. We used them to paint spots, stains, cracks, dirt and so on.



First of all, fit some textures to the original objects. If that's not enough, paint some dirt or cracks and the like to boost up the visual effects. When you use brushes to paint on your 3D work, it makes your 3D work look hand-painted.

19 Use brushes to paint border details

Some 3D works look so unreal because, besides lighting and shadow, the borders are very sharp when two or more planes intersect. We need a round corner or a rough bevel to replace those sharp borders (O). As a rule, the borders are replaced by highlights. Paint some uneven highlights on the borders, then paint some shadows when you are sure of the light direction.

(N) Gradient Overlay has the ability to replace Color Overlay because using the Gradient Overlay can vary the colours as well as brighten and darken the objects you want to process

(O) As you see, the first figure shows an object with sharp borders. In the last one, there are some details of aging kits over the borders

20 Create car lights

Shining car lights are one of the most important features when you're looking at a picture of a car or playing racing games such as *Need for Speed*. Here, we will show two ways of creating car lights. All the lights are painted by Photoshop's tools.

The middle of the car's tail-lights are really cool but can't be rendered well enough in Maya, so we're going to use Photoshop. Basically, we're creating several reflecting lights with a type of blending mode to overlay the original image and boost up the illumination of the tail-lights (P). The right side of the car's headlight uses a glow for its lighting. Take a soft round brush to paint glows with an Overlay blending

Create graffiti on the wall

First, take a hard round brush set to the Overlay blending mode and paint the graffiti outline. Set a low opacity for the stroke, and if you think the outline is too light then you can darken the layer once more. Next, choose a lighter colour over the outline set to the Normal blending mode to cover the texture of the background. Don't cover it all, just paint at the corner of the outline. Paint any shadows from the graffiti using a Hard Light blending mode, then simulate weathering to make it older with the Eraser.

Artist showcase

Wen Lin

Born in Fuzhou, China, I graduated from the Beijing Film Academy and majored in Computer Animation. My dream is to one day work for Pixar.

Toilet's gone After Effects This is a short film animation I worked on with my classmate. I was responsible for creating the main characters, setting the lighting for all the scenes and composing all the shots in After Effects. I love using a special colour tone to great effect on a picture to get a special style

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P

Q R

mode, then apply either a Gaussian Blur or Motion Blur to them. The beam of light is slender because we want to emphasise the performance and vitality of the car. If you want to make the glows more visible, you can duplicate all of them (form a group from all the glows) again. If they look too intense, however, lower their opacity to a reasonable value.

21 Create patterns over an object

If your objects are a little bit bland and lacking in details, try adding some treated patterns to the objects.

To design the colour of the patterns, first create a basic colour for the patterns in a new layer. Next, open up the Layer Style palette for the new layer before setting the Fill Opacity to 0. After the Gradient Overlay checkbox has been ticked, change the blending mode to Soft Light or Hard Light. Finally, go to the Gradient Editor and set a good gradient colour that is fitting for your object Q. As you can see, adding patterns sometimes distorts your objects a little bit, but they can also add beauty to them. This is how we make them seem hand-painted.

22 Create smoke with a brush

Painting smoke is not easy, but it can be quickly achieved by using a digital pen in Photoshop. Here, we used a soft round brush to paint all of the smoke and a spot brush to paint some spots over the smoke R. To use a soft round brush to paint, first design the smoke shape in your mind. Next, choose a soft round brush with a reasonable diameter according to your file size. Turn on Scattering and increase the Scatter value to about 63%. You will then see a little bit of evolution to the brush's shape. For a smoke effect, set the Opacity of the stroke to a low value, for instance 10% or less.

When setting the direction of the light resources, you could paint highlights, mid-tones and smoke shading as described in the first five steps. After finishing the basic shape of the smoke, add some coloured spots over the painting to make the smoke look more realistic, as in Step 6. Increase the Scatter value to something like 704%, and then you will get a brush shape that will give the effect of spots. Finally, you could add some colours over the painted smoke to lend your artwork a dreamlike effect.

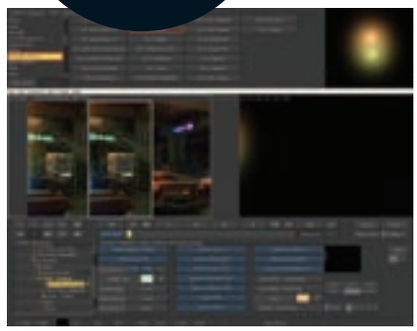
10 hours
Render time
Resolution:
4,290 x 2,442

23 Create light effects

Select a soft round brush to paint in Photoshop. Sunlight resources should use warm tones, so choose orange to paint the rays and lights to simulate sunlight with a Normal blending mode and a low Opacity for the stroke, then you can blur it or duplicate the layer of light again if the effects are invisible.

The Knoll light factory is a powerful plug-in for After Effects, but we used it to add light in combustion. Most of the plug-ins for After Effects can be applied in combustion.

Start up your combustion and open your work to Add Operator as a Composite for it. Select the Operators tag to choose Knoll light factory, then choose the AE LF Disc and open up its Controls S. Move the light source location to the place you want (for example, use the Disc light's halo to light up the scene). Finally, select File and Save Image to export the image.



S If there is no tangible result then you can increase the value of the Global Scale or Element Scale or Outside Ramp Width

Rescuing Maya Highlighting the existence of lighting is probably my greatest gain from my graduate work. I use lots of varieties of lighting effects to show off what I want to express in combustion. I began to realise that the existence of lighting could make your work lively, while properly using contrast colour can add beauty to your work

The control table Maya This was an evolution of my graduate work. I used a new method of producing images to make this work look more stylish. As at one point in this tutorial, making some things become more dated is crucial to this effect, which can also add a sense of history to the piece of work

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I made this...

Incredible 3D artists take us behind their artwork

Artist info

Robert Vari

3DArtistonline

Username: SpotLamp

Personal portfolio site
www.robertvari.com

Country Hungary

Software used Maya, ZBrush, Fusion, Photoshop

> Mia material is a useful shader in Maya, and I have used it on almost all the models that I've made. I also created a Subsurface Scattering shader for the frog's skin

I utilised the beauty and Z-Depth passes in Fusion to make the depth-of-field effect on the final image. Some colour correction finished off the picture.

> The lighting work was very simple, as I used a HDRI photo of a nice sunset that generated the shadows and specular highlights as well

I added some details in Photoshop after the render finished, like the roots on the rock and the spider's web on the leaves.

Comment on this piece
Register with us today at
3DArtistonline.com
www.3dartistonline.com
to view the art and chat to the artist

Software used in this piece

Maya · ZBrush · Fusion · Photoshop

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> I made a beauty and a Z-Depth pass for compositing

> I used mental ray for rendering, but to be honest, it wasn't easy. Due to the big resolution and detailed textures during the first render, mental ray crashed. So I then used a Maya script that separated the big picture into four smaller pieces for rendering. After that, mental ray could render each part of the picture with more stability

The Prince
2008

A little while back, I wanted to improve my sculpting skills in ZBrush. Although I had a very short time – only two days – to do something, I decided that it would be better to start with a simple yet interesting character, like a frog. I started to model the base mesh in Maya. I didn't care about the details, as it was a very simple model, almost like a cube with four limbs. When I finished the base mesh, I exported it into ZBrush and then started to work on the details. After I finished the character, I made the stones around the frog in ZBrush as well.

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Create a storytelling picture in CINEMA 4D

The Awakening 2009

behind the scenes

3D artists explain the techniques behind their amazing artwork

Artist info

Sebastian Storz

Personal portfolio site http://sebastianstorz.cgsociety.org/gallery/
Country Germany
Software used CINEMA 4D and Photoshop
Expertise 2D/3D environments

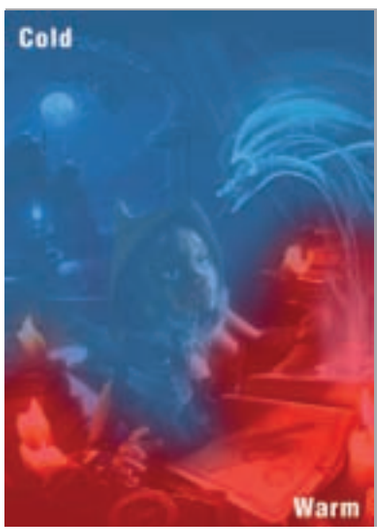
Software used in this piece

CINEMA 4D Photoshop

> Although I'm a big fan of environments, this time I created a storytelling picture with sort of an unrealistic comic style

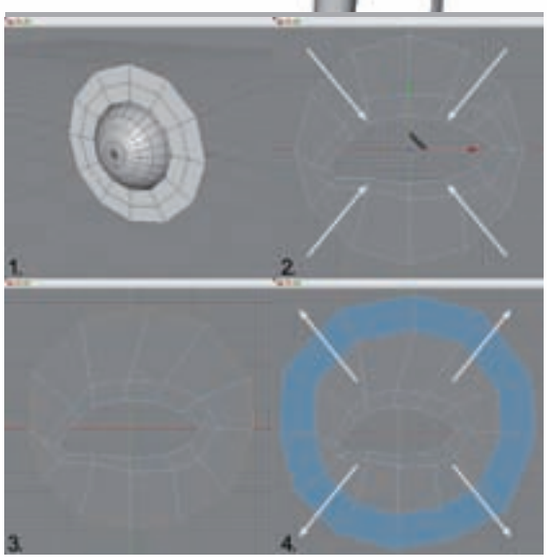
Sebastian Storz is a 27-year-old graphic designer. Browse through more examples of his work at **www.blattform.org**

This tutorial is about mixing two techniques together. The bigger of the two is the 3D section, while the smaller (but no less important) technique is the 2D Photoshop part. With this CINEMA 4D/Photoshop workflow, you have a lot of control over the lighting, colours and mood. The difficulties within this picture were bringing expression to the girl and the cat, composing the different elements like the books, the candles and other stuff, and leading the eye to the focal point of the picture. I tried to create a picture with a cool story behind it.



01 Getting started – I usually begin with the overall colour situation. In this case, I chose a strong warm colour to contrast against the cold. It's important to remember that the image is either cold or warm in feeling, but it cannot be both. It's not a problem to have both in the picture, but one should dominate, even if it's just a little.

02 Depth – Depth in a picture is very important, so I chose dark elements in the foreground to draw the eye deeper in the scene. It's a technique that's used often in comics, as it also helps to draw the eye towards the focal point.



03 Modelling – A good starting point when modelling a face is a simple sphere and a disc object. I started to arrange the vertices of the inner disc radius in the form of the eyelid. Using Edge Loop Selection and Extrude, I expanded the edges to get the polygons that I needed to build the rest of the face.

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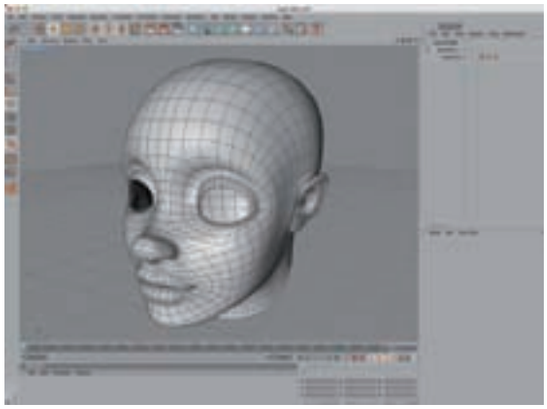
40 hours
Render time
Resolution:
3693 x 2469

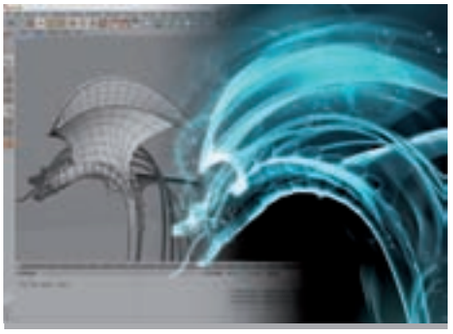
Modelling

Adding interesting elements to the scene

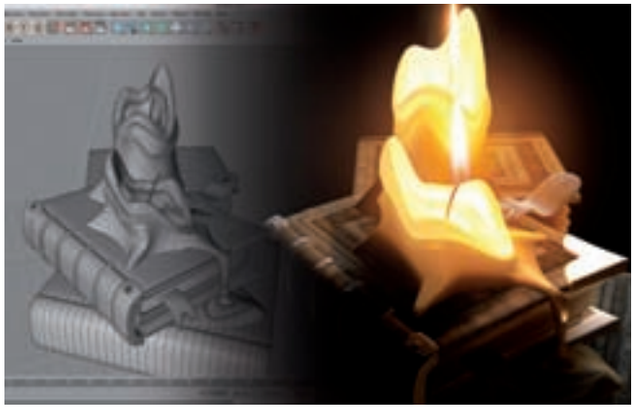


04 Facial features and topology – Heading out from the eyeball, I started modelling the girl's face, trying to find loop regions that allow subdividing without adding too many polygons in regions where I can't use them and support the topology of her face.

05 Poly-per-poly modelling – With this simple poly-per-poly modelling technique, I built the rest of her body, including the cloth and the jewel elements. The cat is done in exactly the same way as the girl's face, only you must remember to build the cat's body thinner, because the hair has a thickness and the cat could end up looking too fat.



06 The dragon – I used the box modelling technique for the dragon, because I needed less detail for this element. After that, I used a simple Fresnel shader to get the shiny X-ray effect. All the other elements for the dragon I did in Photoshop with Motion Blur, Overlay layers and Photoshop brushes (**www.deviantart.com** is a good website to get these from if you don't wish to do them yourself).



07 The candles – The candles are modelled out of a Cylinder primitive. Just do some tweaking on the vertices and use HyperNURBS to get the roundings. A simple way to get the sub-surface scattering effect on the candles is a simple gradient in the Luminance channel. The render time is much lower and the result is acceptable for our needs.

08 Decorative elements – To build decorative elements, download vector art and save them out of Illustrator in the Illustrator 8 format. In CINEMA 4D, use Merge Objects to get the vector as a spline and extrude for this kind of structure.

09 The spell book – Just browse the internet in order to get some images of old medieval books, Celtic rune circles and other stuff to create the texture of the book.

Artist showcase

Sebastian Storz

From 2000 to 2003 I studied design at the Karlsruhe School of Graphic Arts. In the following years I used 3ds Max but mainly Cinema4D. Today I work at an ad agency and use 3D applications for packaging and character designs.

Skyrays ZBrush (2009) *Skyrays* used a combination of ZBrush and Photoshop to create, and took around three weeks to finish

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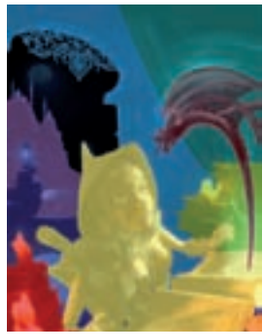
10 Lighting – The good thing about having all the elements in different scenes and rendering them separately is that the lighting is much easier and clearer to handle. The only thing you must be aware of is that the overall light situation is the same on every single element, and all the objects that drop shadows on each other are in the same scene.



11 Post-production – An important part of my working method is to render all of the elements of the picture in layers. With this way of working, you have much more control of the colours and lighting because you can do a lot of tweaking later in Photoshop.

12 Rough composing – On this screenshot, you can see the rough rendered layers after positioning. As you can tell, there's a lot of work to do to get the elements to match each other, fill black areas and define the colour mood of the picture.

13 Playtime – Once the elements are in place, you can start playing with Levels as well as Hue and Saturation to set the overall mood. Experiment with glows (for the candles) set to the Overlay mode to get high-saturated, intense colours. From left to right, the pictures in the screenshot show: a rough render; colour tweaking and glows on an Overlay layer; painted candle flames.

14 Edge definition – At this point, you can start to paint over some elements, work out the contours and define some edges. I also like to paint the light effects like the lamp on the balcony, the glows on the main character, light edges on the cat and so on. Basically, just make the picture look even better!

15 Background – To build the background, I've used a lot of matte painting techniques. The only thing that is truly rendered is the palace. Objects like the moon and the mountains are photo references (of course, having been heavily painted over and colour corrected).

Harvester CINEMA 4D (2009) This work of art was done using CINEMA 4D for the modelling, Silo for the sculpting and Photoshop for the post-production work

Deep in the woods CINEMA 4D (2009) I've tried to capture a fairy-tale feeling in this picture. It's rendered in layers in CINEMA 4D and composed it in Photoshop

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I made this...

Incredible 3D artists take us behind their artwork

Artist info

Marco Rolandi

Personal portfolio site www.marcorolandi.com
Country Italy
Software used 3ds Max 7, V-Ray, Photoshop CS

In the scene, the viewer approaches a large city from the harbour, where the sea has been replaced by an endless maze of railway tracks

> V-Ray was used to get the dirt effects and to do the rendering over a network. It wasn't used for Global Illumination, which is its usual task

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"The image is a frame of a longer animation, the whole scene being part of a steampunk project I was working at the time; something that today has been changed and matured into a would-be movie script (I'm still working on that one)"

"I tried to drive the attention of the viewer across the image from right to left and vice versa by using areas of brightness and shadow, as well as positioning most of the elements in the intersection of several compositional lines"

"Photoshop CS was used to composite the various render passes together into one image"

Software used in this piece

3ds Max · V-Ray · Photoshop CS

Rail Haven
2007

"From a technical standpoint, the image was done in almost a week, collating and perfecting objects that were already modelled for a steampunk project I had already started. I cannibalised all of the 3D models I made previously and recycled all the pieces in the most unsuspecting ways in order to achieve a good result without spending months remodelling everything I needed."

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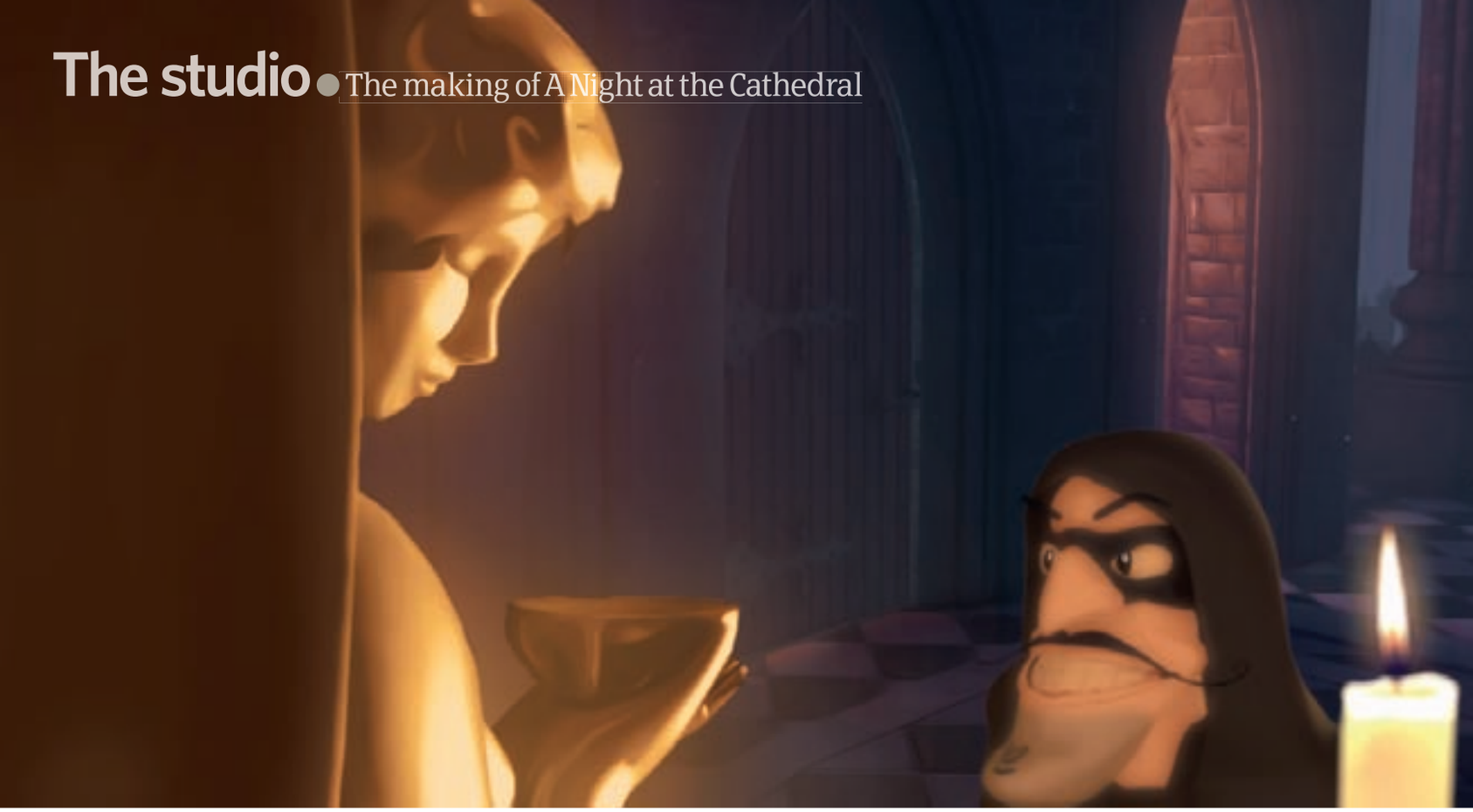

The making of A Night at the Cathedral

Studio Lampion

Production focus

3D artists explain the techniques behind their amazing artwork

Artist info

Studio Lampion

Website www.studiolampion.com
Country Germany
Software used PANDA, AfterEffects, Photoshop
Expertise Modelling, lighting, texturing, materials

Software used in this piece

PANDA AfterEffects Photoshop

> We were aiming to portray a painterly, traditional cartoon style, and wanted to avoid the somewhat sterile look displayed by many modern 3D productions

Stefan Minning from Studio Lampion explains how he and colleague Matthias Koenig created a Disney-style short film in 3D but with a traditional 2D look

Studio Lampion is a graphics and animation studio founded in 2007 by computer graphics artists Stefan Minning and Matthias Koenig in Berlin, Germany. With their local and international clients, this small team works on projects in the areas of animation, film, design and visualisation.

When we started preparing for the production of what would become our animated short film A Night at the Cathedral, all we knew was that we wanted to create a showcase project for our prospective clients and to develop an efficient pipeline for our future productions. It would have to be an animated short film of high quality and incorporate a distinctive style, yet at the same time be as simple as possible. As a start-up company with only two core artists, we realised it would be vital to start out small and within reason – especially considering the production would be 100 per cent self-financed and that we would be working on it alongside our paying projects for clients

While brainstorming for story concepts, we came up with more than half a dozen plots in just as many different settings, but soon realised they all had one thing in common – they were too complex! So we took a step back and

A

Reference images

Many images were collected, including one of the town of Boppard on the Rhein River, which influenced the style of the building models, a statue, Cologne Cathedral and one of its colourful stained-glass windows.

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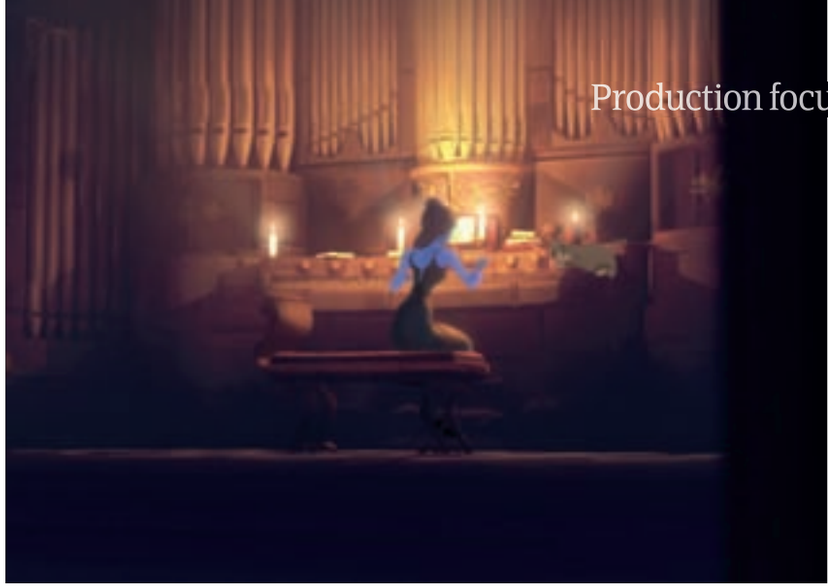


> The impressions gathered during research trips were incorporated into our concept art, which we drew, painted, modelled and rendered in 3D

critically analysed all the concepts we had come up with and whether there was anything that could be simplified so much as to be realistic within our modest means.

After much deliberating back and forth, we eventually decided to go with the medieval theme, as this undertaking seemed reasonable after eliminating any dispensable characters, settings and subplots. Moreover, we felt a strong connection to the main character and had a vivid image in our minds of what the resulting film should look like. We were aiming to portray a painterly, traditional cartoon style, and wanted to avoid the somewhat sterile look displayed by many modern 3D productions.

At this point in the process we had concepts for the characters, the setting and a basic plot, which boiled down to 'our bird-brained protagonist Belze is on a quest to steal the golden statue of the Holy Mazioles from a medieval cathedral and, of course, fails miserably.'

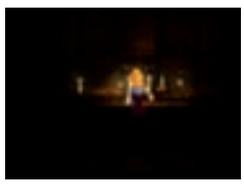
With the story's plot taking shape, we decided to get a feel for the film's atmosphere and surroundings, and did a lot of research on medieval art and history (A). Unfortunately, few medieval structures remain in our town of Berlin, so we took some time to travel to historic and inspiring places, such as Cologne Cathedral, Notre Dame de Paris, Lyon and to visit castles on the Rhein River. There, we took hundreds of reference photos, many of which we later reused as textures or details in our background mattes.

The various impressions gathered during these research trips were incorporated into our concept art, which we drew, painted, modelled and rendered in 3D to visualise our ideas and to help define the look of the film (B).

Around the same time we started sketching out ideas for the protagonist Belze, our evil but not exactly brilliant thief. Belze represents the archetype of the comedic villain – he is sinister and wicked, yet clumsy and totally useless. In designing this character, we were inspired by Disney villains and also took some cues from the *Monkey Island* series.

His antagonist is Clara, a young lady playing the organ during the night our story unfolds. She is a somewhat one-dimensional plot device in that she doesn't have any motives of her own, and is only there to react to what Belze is up to.

With the characters and story roughly laid out in our minds and on paper, our next step towards the realisation of this project was creating storyboards. You might say we cheated a bit in this phase, as we did not actually draw most of the storyboard sheets at all; instead, since we happened to already have some early models of the characters and



(B)

Concept work

Storyboards formed part of the concept work, like a panoramic shot in the bell tower and the statue of the Holy Mazioles. Early concept renders were based on the impressions gathered from our research trips.

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C 3D character model of our protagonist Belze from the front and side with overlaid wireframes (8,500 polygon faces)

environments under way, we used these to create mock storyboards in 3D. This, of course, benefited us immensely, as we are definitely better 3D artists than draftsmen, and this way had more options and patience for experimenting with the scenes' layouts and getting perspectives to work just right. Furthermore, we could keep working in these initial scenes over the course of the project, and continuously updated them to include our latest improvements in modelling, texturing and animation. This workflow streamlined our task of managing the huge number of digital assets a 3D film production invariably entails C.

The rig is quite elementary and based on one created for an earlier animated short, Now That Takes The Biscuit, which was similar in style to this film. The rig lends itself well to cartoon animation and features support for stretchy limbs and basic squash-and-stretch effects, but does not offer much in the way of fancy automation or dynamics.

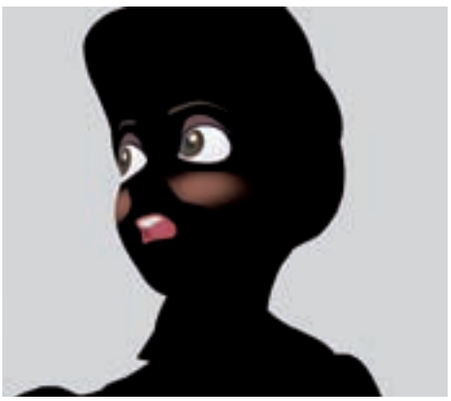
While Belze's face was rigged the traditional way using blend shapes, we decided to go for a totally different approach for Clara; her flat and cartoon expressions would have been impractical to model, texture and animate in 3D D, so we developed a proprietary plug-in for Adobe After Effects that projects the facial features onto her face in 2D. For this to work, we needed to render out UV and ID passes of her head so that our plug-in would know where to place the eyes, mouth and nose. As these facial features were hand-drawn and animated in 2D, it was easy for us to create custom expressions depending on each scene's specific needs, and to time and animate them accordingly E.

At one point during the production we were considering using mocap (motion capture) technology for our character animation, but eventually came to the conclusion that it would be cost-prohibitive and would also most likely work against the cartoon look we had established for this film. So everything ended up being animated by hand in the traditional 3D way. The biggest challenge here was properly emulating the cartoon animation style we had used as our reference. We soon learned that the way squash-and-stretch animation works in 2D may look great but is unfortunately physically inaccurate, and therefore hard to translate into our meticulous world of 3D space and movement F.

Our solution was to animate as far as possible in 3D and to afterwards emphasise the animation and squash-and-stretch effects using 2D tools, such as the Liquify filter in Photoshop, on a frame-by-frame basis. This method became feasible only due to our particular approach to shading and lighting. Unlike most productions, where shading and lighting are applied in a 3D application on actual 3D models, we used an in-house solution to avoid this frustrating and painstaking task. In this project, the shading and lighting were done in 2D in After Effects using our proprietary plug-ins Normality and Celulight. This real-time relighting solution enables us to interactively shade and light animation sequences that were rendered as normal passes from a 3D program beforehand.

We found several advantages in this method. All changes are applied in real-time, making the process feel far more

D (left to right) The final composited face showing the character's facial features added in 2D. Clara's plain face straight from the 3D renderer. Her facial features applied to her head based on the positional information in the UV and ID passes



Low polys and basic meshes

The character models in this film consist of very basic meshes, with a polygon count closer to last-generation videogames than most modern film productions. We opted for this route because it is well suited for our simple character designs. Their bold features helped us to focus on creating strong silhouettes that are easily read and not having to worry so much about getting the rig messed up or facing other technical annoyances.

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F

intuitive and creative than hitting Re-render time and time again in a 3D program. As there is no appreciable delay involved, this workflow lends itself well to creative experimentation. Best of all, we could view the character animations within the context of the final backgrounds in a colour-corrected, composited environment, making it easy to judge the quality and appearance of our final shots.

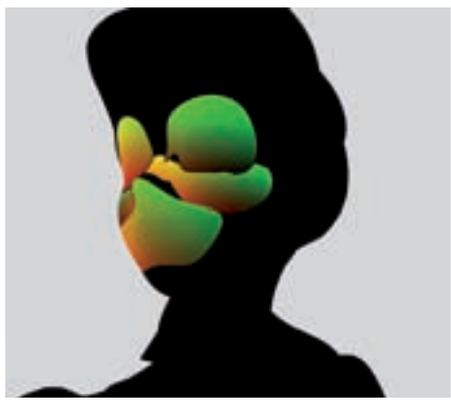
To use Normality, a number of simple passes are extracted from a 3D renderer that contains, for example, information about an object's surface normals and the scene depth encoded in a 2D image format. The passes render in seconds and require no tweaking, making the process totally fail-safe.

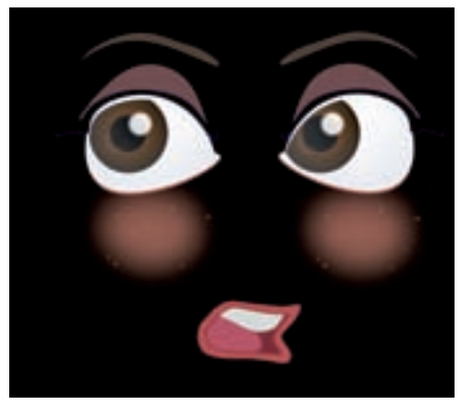
This image sequence is then imported into After Effects, where Normality is applied to the normal pass. Once a light has been added to the scene, Normality calculates the shading right there in the compositing environment, and any changes to the lights and shaders are made visible immediately and interactively.

F The character's normal pass is imported into a composited environment in After Effects

G The cathedral model (12,000,000 polygon faces) is split up into more than a dozen blocks (visualised by colour in this example)

E





E A UV pass was used to co-ordinate the position of the eyes, mouth and nose relative to Clara's head, while the ID pass distinguishes the individual facial features by applying distinct colours to each area

> "As there is no appreciable delay involved, this workflow lends itself well to creative experimentation"

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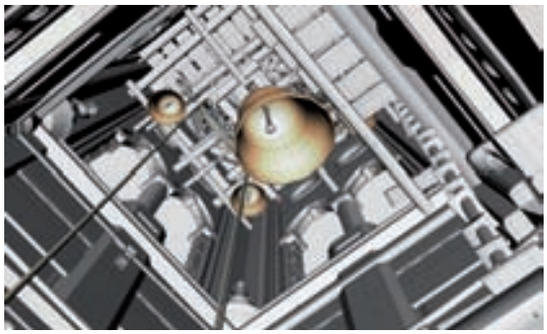
> To make working with this 12,000,000-polygon scene bearable, we split the cathedral up into more than a dozen blocks



H Benches, stained-glass windows, chandeliers and many other complex details inside the building use instancing to reduce the memory footprint

What started out as a set of simple plug-ins for After Effects has developed into a complex shading and lighting solution over the years. The software is no longer limited to mere diffuse or specular lighting. It currently includes support for fake reflections, refractions, Subsurface Scattering, screen-space Ambient Occlusion and even a very simplified Global Illumination model, many of which were used during the production of A Night at the Cathedral.

While part of the team was busy animating and shading characters, others began creating background mattes for all 30 shots, which meant modelling a medieval cathedral and its surroundings from the ground upwards. Obviously, a cathedral and its interior is an enormous and highly detailed scene, which can be quite a burden even on state-of-the-art software and hardware. Consequently, the polygon count for individual objects was kept as low as possible. To make working with this 12,000,000-polygon scene bearable, we split the cathedral up into more than a dozen blocks, each pertaining to a specific area and could be imported on a shot-by-shot basis G.

Wherever it made sense, instancing was used in order to reduce the scene's memory footprint. For example, the side of the cathedral is comprised of a dozen identical instances of a single wall piece that are automatically repeated. By doing this, we saved a lot of memory H.

Both the cathedral model and textures are basic in terms of the techniques applied – just clean polygon meshes and medium-resolution textures, including Diffuse, Bump and Normal maps. Our trick to creating the painterly backgrounds seen in the film was Studio Lampion's proprietary non-photorealistic 2.5D renderer, PANDA (Paint AND Automate). This tool automatically repaints scenes using actual strokes painted by an artist by converting the location and direction of these 2D brushstrokes into actual 3D space. It then becomes possible to automatically repaint the scene from arbitrary perspectives. The brushstrokes remain coherent over time to avoid the noisy flickering effect that more simple 2D paint solutions may exhibit I.

After having PANDA create a painterly base for a shot, we brought these background layers into Photoshop for a basic cleanup and to add additional detail in 2D. Often, reference photos of statues and ornaments we had taken in castles and churches during the pre-production phase were used to embellish the background mattes by first extracting a Normal map from the photo and then conforming the colours and overall lighting to the background environments.

Finally, everything was brought together in After Effects where we added special effects such as fire, snow and fog to the shots, and integrated characters and backgrounds by making the lighting match using Normality.

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Keeping on top

Thanks to the software developed at Studio Lampion, its render times for A Night at the Cathedral were only a fraction of what a full 3D ray tracing renderer would have required.

The production of A Night at the Cathedral was finished in November 2008 after about 11 months' worth of work. Studio Lampion is currently refining certain elements of the film based on the feedback that it has received from its screening audiences.

> Thanks to the software developed at Studio Lampion, its render times were only a fraction of what a full 3D ray tracing renderer would have required

I The composited background matte after automatic repainting in PANDA, hand-painting extra details in the far distance and adding special effects such as candles and snow, with the other images showing a wireframe render of the little shop outside the cathedral, as well as the depth pass of the scene and the normal pass

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I made this...

Incredible 3D artists take us behind their artwork

Artist info

Michal Kwolek

3DArtistonline

Username: _Kreska_

Personal portfolio site http://kreska90.cgsociety.org/gallery/

Country Poland

Software used 3ds Max, Photoshop

Texture, lighting and modelling

Kids
2008

This picture was created for a contest on a Polish CG website. The story is that after the TV failed, the couple had to find new avenues of entertainment. Although they were very cautious, they made a few mistakes. Now they have not only a broken television but also a whole bunch of new problems. The side effects of a broken TV are horrible!

> The carpet and floor textures are pretty simple, but I wanted to get that peeling, horrible old wallpaper design for the walls. This was created in Photoshop

> Although the characters are fairly simple, the idea was to make them stylised rather than realistic. What was important was getting the expressions of tired resignation on the faces of the parents

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> There are also lots of little things scattered throughout the image for you to discover

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> There are only two light sources in the image – the table lamp at the side and the window in the kitchen. On this version of the image, the white balance was set so that the light fixed in the lamp gave a cleaner, whiter light, which means the exterior moonlight then became very cold, giving a blue cast over that side of the image

Software used in this piece

3ds Max Photoshop

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Software used in this piece

3ds Max 9 | V-Ray 1.5 RC5 | Photoshop CS3

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The Ruins

Model, texture, light render and post-process

"Primarily, I am involved in scene construction, but my work doesn't completely depend on using 3D software. Often, I like to use matte painting to make my work funny and fast"

Jie Ma 3D artist

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Step by step

Easy-to-follow guides take you from concept to the final render

Artist info

Jie Ma

Personal portfolio site http://cutjie.cgsociety.org/gallery/

Blog: www.reaperex.blog.sohu.com

Country China

Software used 3ds Max 9, V-Ray 1.5 RC5, Photoshop CS3

Expertise 3D modelling and lighting and also painting with Photoshop and compositing images with a matte style background

Step by step: Create a ruined city

Because I want this picture to appeal to its viewers without using too many high-tech forms, I have included easily recognisable elements from daily life, such as buildings, roads, billboards, etc. In order to make these mundane objects look interesting, the atmosphere needs to be emphasised, which is the most difficult part of this whole piece.

There are two things that need to be considered throughout the creation of this composition. First, a good atmosphere has to capture the light, shade, colours and objects in the scene. Second, the sense of space and proportion should always be emphasised. Remembering these two points allows you to consider which effects will be best suited to the scene while working on it.

I used 3ds Max 9 to put up most parts of the street, and V-Ray to output the image. The lighting and material systems were also done using the V-Ray renderer, which is particularly powerful because it is simple, effective and fast.

When the 3D work was finished, I imported the rendered image into Photoshop to make a final adjustment and add new elements. I didn't want to use too many models in this vista, so many of the buildings were composed in Photoshop.

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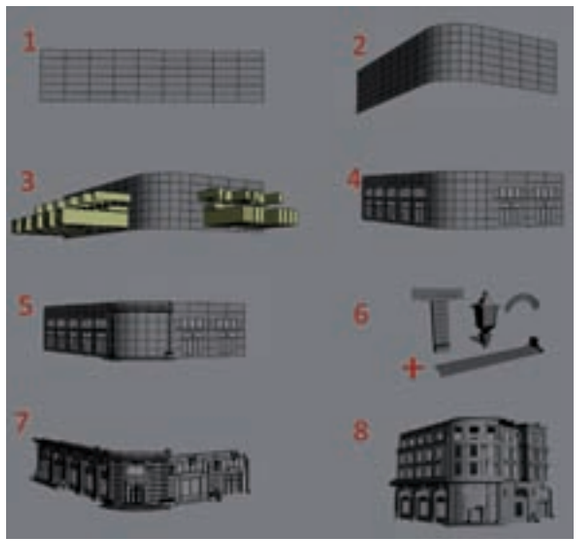
Build a strong foundation

Start creating your houses and other elements

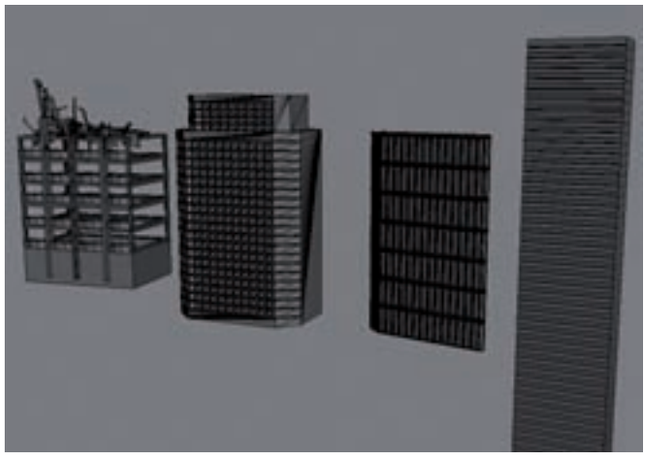
01 I began by drawing many sketches, and the one you see above is the most similar to the finishing one. What was in my mind in the beginning was just warm light in the afternoon, a light rail and several shabby buildings, but I applied an adjustment later because I found it didn't work well if real objects were in the scene. The lighting of the sketch is quite close to that of the final picture – I didn't want garish colours, so I emphasised both yellow and blue for the moment.

02 The buildings were put together using boxes. On the right you see the house that's the most delicate to make. First use a plane to make a section of it. Build a box according to the windows' outlines, then complete them through a Boolean op. Finish by adding details made up of polygons like lamps, bricks, steps. Create the other two storeys in the same way.

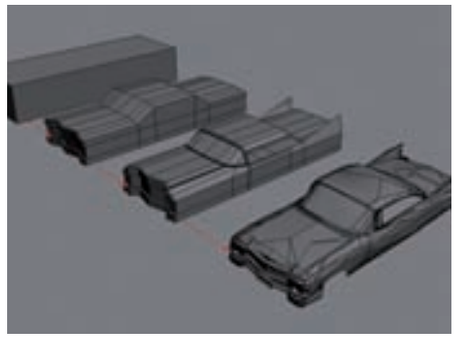


Save time on building

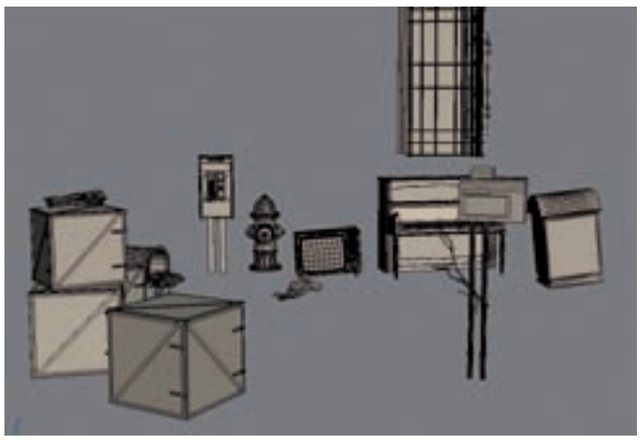
Once you've created a building make sure you save it and then try adding a few details and save it as a separate file. Add height, put steps into the shape of the building and without much effort you've created something that's different. The human eye will recognise duplicated objects almost immediately an it will ruin a scene, but you only have to change a few details or the textures for it to appear different.



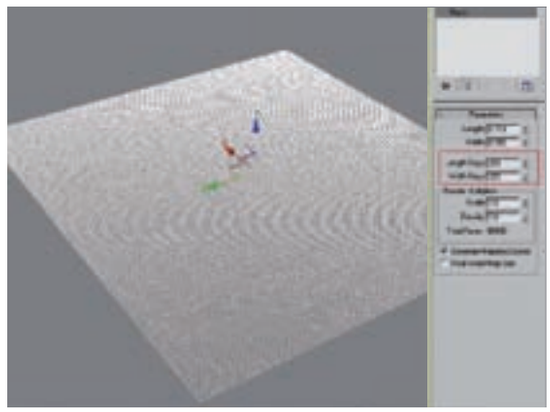
03 The buildings in the distance were much easier to create, as they were formed totally from boxes. I tried to make these models simple since they were the most distant objects in the scene.



04 The model of the vehicle was fairly complicated compared to creating the buildings. Because it is not in the immediate foreground, you can make it how you like. With this example, it was built with boxes. For the sake of adjusting the outlines, don't make too many polygons at first. You can add them in the picture-making process – during which I only used the Move tool.



05 The more odds and ends there are, the more appealing the image will be. A macadam road surface, streetlamps and scraps of paper can all enrich the picture if you feel that your scene's a bit too empty. Try to avoid using an excessive amount of polygons for these.



06 Next up, I started making the ground using a displacement map. For this you need a plane that has plenty of polygons. Then find a picture with a cement texture, discolour it and increase its contrast in Photoshop. This creates the texture of a cracked ground for use in your composition.

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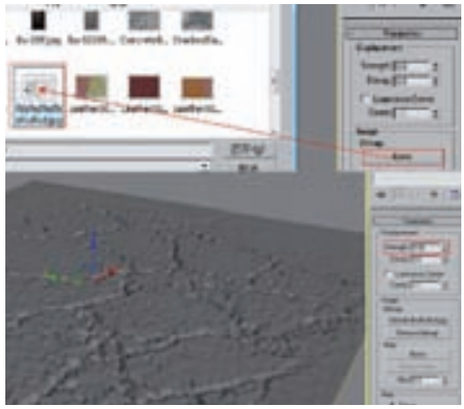
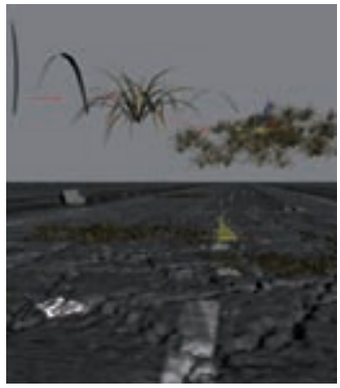
Deserted city

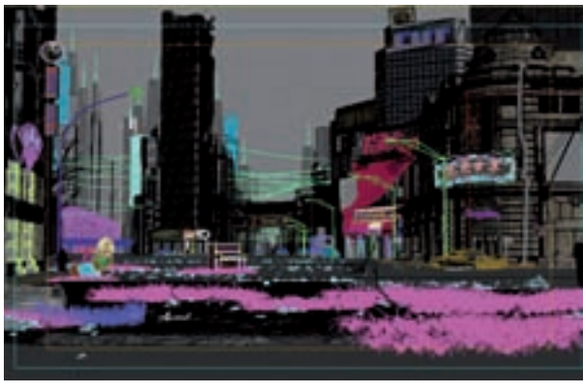
Give it a wild, abandoned look



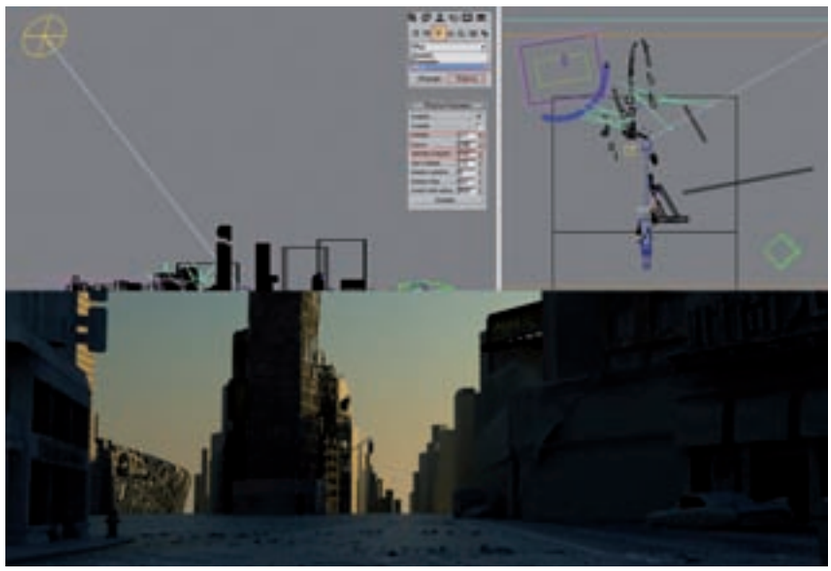
07 **The Displace Modifier** was then applied to this plane in order to make the cement texture effect appear. After that, I created several copies of this part of the ground and then put them in the foreground of this scene.



08 **Weeds were added** to make the ground look deserted – I made one blade of grass and copied it repeatedly. Then I placed the grass, and odds and ends created earlier, on the ground, plus the stones that make up the macadam road.



09 **Here, the modelling** part ends. Once all the buildings were placed into the picture according to the original sketch, I was pleased to find that the actual effect turned out to be much better than I initially expected.

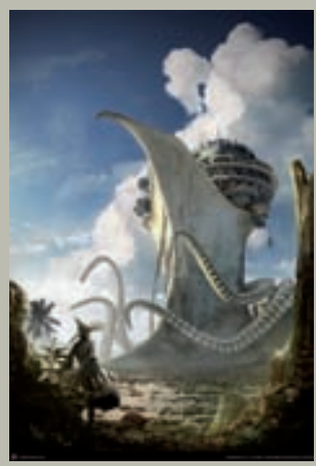


10 **For the first** light, V-Ray's VRaySun was used, which can imitate real sunlight and figure out the time period of illumination according to the height of the sun. By adding VRaySun to the environment, all things that can be reflected in the environment do so accordingly. I set the illumination intensity to a low level. The picture looks somewhat sombre after the first instance of rendering, so another light is needed to make the picture comfortable.

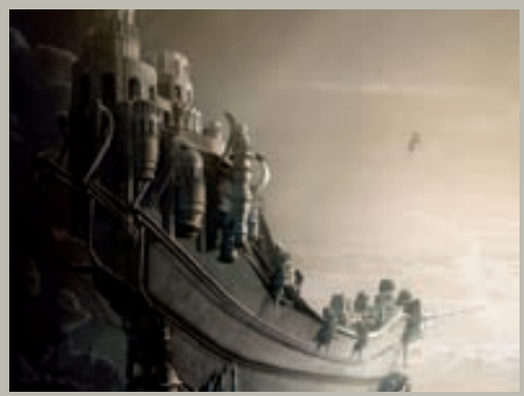
Artist Showcase

Jie Mia

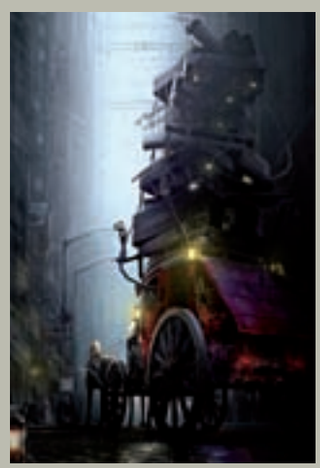
Jie is from a small town in northeastern China. He works freelance creating illustrations, animation and 3D education scenes. He uses 3ds Max to make most objects but then combines them with 2D.



Lighthouse, 3ds Max, Photoshop (2009)
This is a lighthouse in a story I was creating. I used 3ds Max to determine the composition screen. Distant buildings were created with 3D software, and I also painted the character and the plants.



Port Evening, 3ds Max, V-Ray, Photoshop (2007)
I wanted to create a large spaceship in the form of a flying city. It was modelled in 3ds Max, rendered in V-Ray and cleaned up in Photoshop.



New Year, Photoshop (2007)
This work was completed on the last day of 2007. During that period, my life was very boring. Even though there were festivals, sometimes people simply cannot feel happy.

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Creating atmosphere

Clever lighting is a good start

11 The second light consisted of a standard Target Spot in the left of the picture. Beside it, two boxes were set up to create the effect of most of the sunlight being blocked out by the buildings, causing long shadows. The second rendering was much more satisfactory, as the relationship between the light and shade in the depth of the image was better than before. There were some dark, almost black areas, but it wasn't a problem because the light and shade structure was clear, while the rest could be revised in Photoshop.

12 Next, materials needed to be added to the objects. Smoke and Falloff were mainly used for this task. Smoke was used to imitate stains, added into Bump with the parameters set to a fairly low level. Objects like this appeared a little shabby, but the map was still brand new, so a Falloff material was added in the Reflect channel that could control the reflective part of objects according to black and white colours. Four maps mainly made up this piece of work, namely Wood, Cement, Leaves and Road.

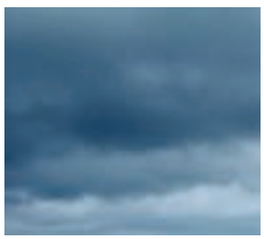
13 This is the picture that was produced after rendering. Making some late adjustments, four fundamental channels were created to make quick adjustments to the light, shade, colour and definition. The sky wasn't composed in a 3D program like the rest of the scene because it can easily be made in Photoshop.

14 The image was imported from 3ds Max into Photoshop. First, I chose a suitable picture of the sky as the background, then I added many of my favourite pictures to the buildings. I didn't adjust the colour of the picture immediately, but tried to see what other elements were still needed.

15 In order to perfect this building down to the last detail, a reflection effect was added to the glass. Thanks to the glass channel that was made earlier, this was extremely easy. All that was needed was to have the image materials distributed in the glass selection.

Adding skies

Some 3D artist will create every single element in a scene which includes background details and the sky. However, if you have a matte painting of a city scene it can be used to fill out the background without having to model it. The same applies to the sky. Why go to the effort of creating a complete sky when you can go outside with a digital camera and photograph one. Keep a library of skies taken at different times of the day and match one to the lighting you've used in the image so that the shadows match up with the sun position.



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Final touches

Subtle colour changes enhance the effect

40 hours
Render time
Resolution:
4,000 x 2,124

16 Most of the buildings in the distance were put together using photographs. No real thought needs to go into deciding which ones will be used, as they are a minor element of the composition. I decreased their definition and saturation, trying hard to match their colours to the sky. Then I modified their light and shade attributes according to the sketch relation of the entire image.

17 For the ground, an image featuring the texture of cement was put over the uppermost layer and, by superimposing highlights, made to fit the ground. This improved the realism of the ground.

18 Those areas that gave off light were the best spot elements in the image. Just a few details like these would be enough to make the picture look airy. I drew two lamps in the picture, both emanating warm colours, although the colour of the distant one was a bit weaker.

19 I strengthened the lighting effect within the picture, staying with the high-ranked gradual change of the colour from orange to blue. But the picture would be very boring if there were only orange and blue colours, so I added a little green in the connecting part of the two colours. I drew them slowly using a brush set to the Soft Light blending mode.

20 Finally, I decreased the definition of the foreground and increased that of the farthest point. I also displaced buildings I didn't need, increasing the depth. The shot shows the picture that was achieved after a final random revision. I discoloured it, then added a few yellows.

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I made this...

Incredible 3D artists take us behind their artwork

Artist info

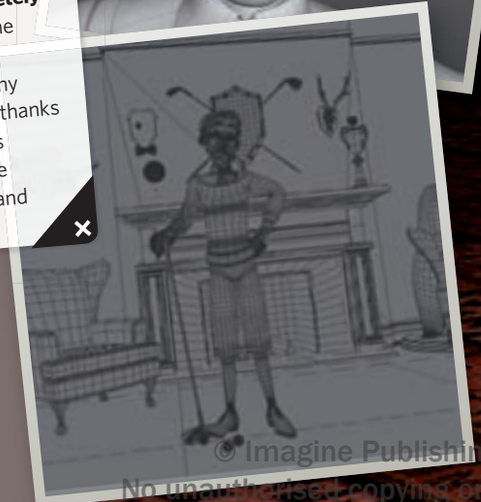
Daniel Moos

Personal portfolio site
www.muhvieh.ch.vu
Country USA
Software used Silo, CINEMA 4D, After Effects

> Since the room is a well-kept parlour, the textures mostly consist of tileable patterns. Google's image search and especially CGTextures.com were indispensable companions

Texture and render

> After spending a lot of time in search for some good inspiration for the main character, I accidentally stumbled upon Milo's father while watching Disney's *Atlantis*. He seemed exactly what I was looking for – a warm, sympathetic but still passionate grandfather figure.



The Trophy Room 2008

I never played golf but my father was a passionate hunter, so it made completely sense to me doing this one. During the process I learned a lot about multiple passes, backups and the untrustworthy nature of computers since it crashed thanks to the hi-res textures. Everything was modelled in Silo which is my absolute favourite package for 3D modelling and designing characters.

Software used in this piece

After Effects · Silo · CINEMA 4D

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This took me a while. I started doing the lighting parallel to modelling the main character. Luckily, no one will ever see the first few tests! After first trying normal lights only, I ended up just using a big area light for the window and GI with an HDRI

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Step by step: Create a steampunk robot

Step by step
Easy-to-follow guides take you from concept to the final render

Artist info

Sung-Hun Lim

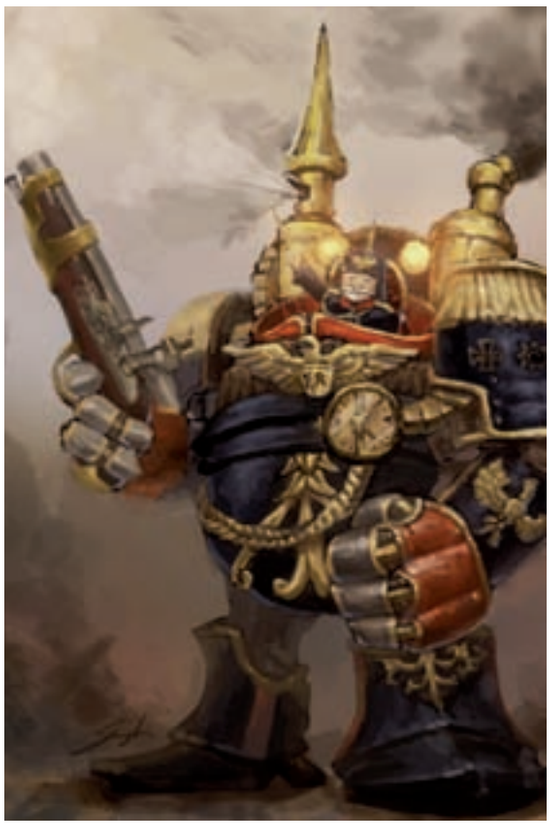
Personal portfolio site www.ryan3d.net
Country Democratic People's Republic of Korea
Software used 3ds Max, ZBrush, Photoshop, Brazil
Expertise Character and creature art for videogame illustrations

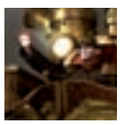
Steam Wilhelm the Great I 2009

"I wanted to match the robot to the timeline of the Industrial Revolution (1760-1830)"

Sung-Hun Lim works as a character artist at BioWare

This tutorial is going to show you how to make the character from scratch. You will see each step and learn the progress along the way. It all starts with coming up with the concept, which in this case was to create a giant robot, powered by steam and set in the era of Germany's Wilhelm I. From there, the tutorial shows the preliminary sketches, the concept artwork and the sources of inspiration. The better idea you have at this stage, the more focused and detailed the final model will be. We then look at the actual modelling to get the shape of the robot and then the textures and lighting.





Creating the concept

Source as many images as possible

01 At the command of its emperor, this steampunk robot is called Wilhelm the Great. It is a fighting robot created for war, but mainly used to protect the emperor. I got the inspiration from Wilhelm I (1797-1888), who was known as the first German Emperor and the King of Prussia. Under the leadership of Wilhelm, Prussia achieved the unification of Germany and the establishment of the German Empire. With *Steam Wilhelm the Great I*, I tried to put a humorous spin on what force he used to unify Germany.

The key to the thinking behind this is the power of steam. Imagine that Wilhelm I had a giant steam robot, which helped him make waves in history. Speaking of which, I wanted to match the robot to the historical timeline of the Industrial Revolution (1760-1830), making it the most powerful warlord during the Revolution. To create a concept from this idea, I first made a reference chart using Google Images to gather as many images as I could.

02 This is a rough sketch for *Wilhelm the Great*, drawn in around five minutes. Here, I was aiming for a triumphant pose after a landmark victory in war.

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> “I tried to put a humorous spin on what force Wilhelm I used to unify Germany”

Software used in this piece

3ds Max · Brazil · ZBrush · Photoshop

Model, texture, light, render and post-process

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Artist Showcase

Sung-Hun Lim

Sung-Hun, who also goes by the name of Ryan, lives and works in Canada as a full-time modeller

Viking Warlord 3ds Max
This is a Viking warlord for my client NDOORS for its MMORPG game *Cinematic*

Gigantic Egyptian Zombie 3ds Max
A gigantic Egyptian zombie for my client NDOORS for its MMORPG game *Cinematic*

Pallantedes 3ds Max
This is Pallantedes from the Conan the Cimmerian book *The Hour of the Dragon*

Colour and shape

Choose a colour palette and perspective

Prussian Blue

To come up with an overall colour scheme for your project, you need to refer to your source material. How colour has been used has changed throughout history thanks to the dyes and paints available at each stage. Ensure your paint scheme is historically accurate.

03 This screenshot shows the detailed version from scratch. You can add more detail if you want.

04 The colour palette was formed from reference images that I prepared before. I got the idea from the German Emperor, so the basic colour is a Prussian blue. A little red stripe is going to be a highlight colour on the body

05 This illustration showed the perspective of the piece, but it's hard to figure out the orthographic projection. The front and side images are normally redrawn in Photoshop using the Copy and Paste commands, while I work out what the best concept for the front is in terms of 3D.

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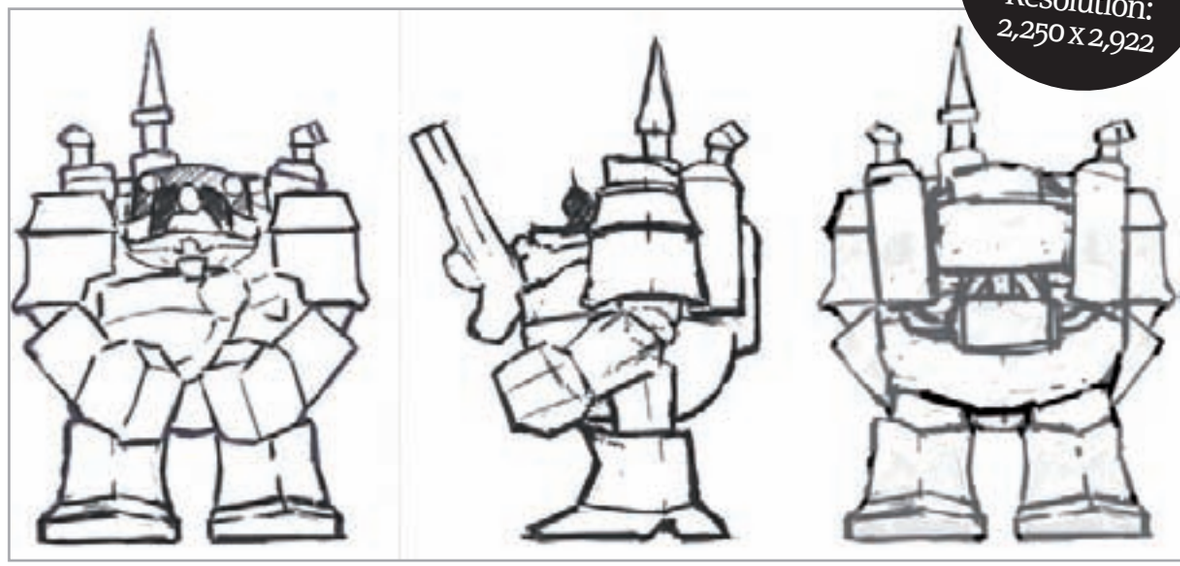
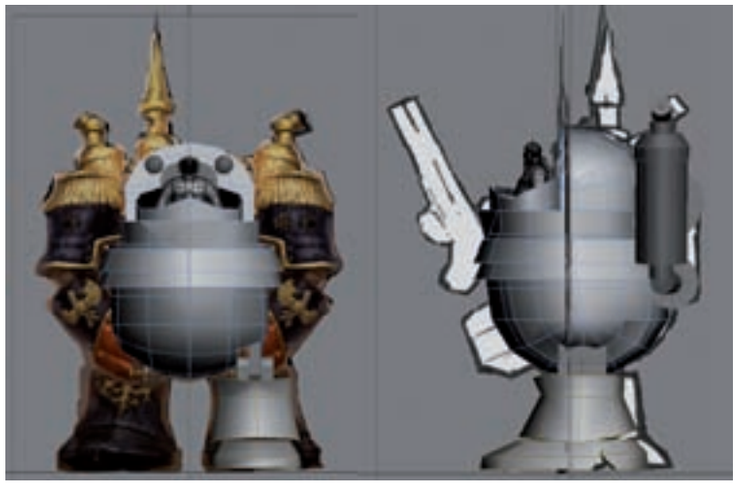
Begin modelling

Make your creation larger than life

6 hours render time
Resolution: 2,250 x 2,922



06 The next step is to draw the silhouette from the front, side and back views. If you don't do it this way, you will have to spend more time creating it in 3D, which can be more difficult. Forming the composition in 2D is a fast way to fix the scale and proportion.



07 At this point, grab the image that has just been drawn. Then use an Alpha mask in order to remove the outline, and start the sketch base modelling.

08 We can make a prop from the image as well. The most important aspect to consider is proportion, so check the size of the gun and make sure that the character's hand is able to grip it accurately.

Alternatives

You could just use the sketches and drawings as reference points and create the robot from primitives on its own. Start with the general shape and add elements in turn to get the proportions right before starting to refine them into the more detailed shapes.

09 This is the final version of modelling. After this stage, you can play with the camera distance, field of view and the size of the render. This camera view was chosen in order to check where more time was needed for texture detail.

10 Now move over to ZBrush and create a Detail Normal Map. Here, we are going to use an Alpha mask and get a Normal Map ready to diffuse and render.

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Adding details

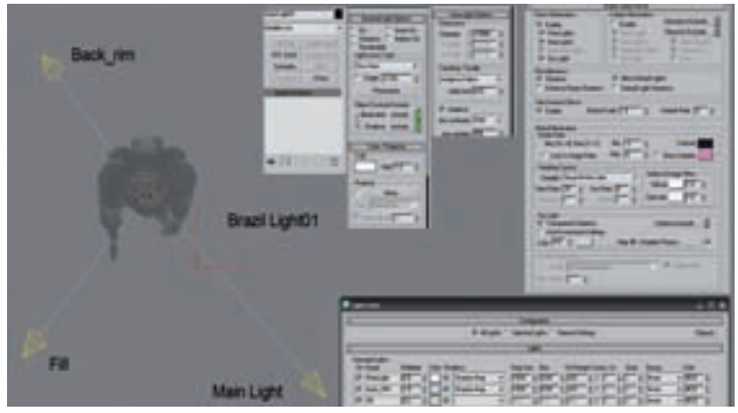
Sort out the lighting and the remaining fine details

11 Put the model OBJ file into ZBrush. I made an Alpha Map for ZBrush masking, which is the easiest way to make detail normal. This mark is really complex to draw by hand, but if you can use an Alpha mask, it will be easy. So bring the Alpha image from Menu>Alpha>Import and put this image into the object (Tool> Masking>Mask by Alpha). Remember that this image detail is dependent on Geometry Subdivision, so we recommend using over six levels (Tool> Geometry>SDiv). After that, go to Deformation and select Inflat and a positive number. You can see that the model is popping out. Add more detail on the top and use ZMapper to create a Normal Map.

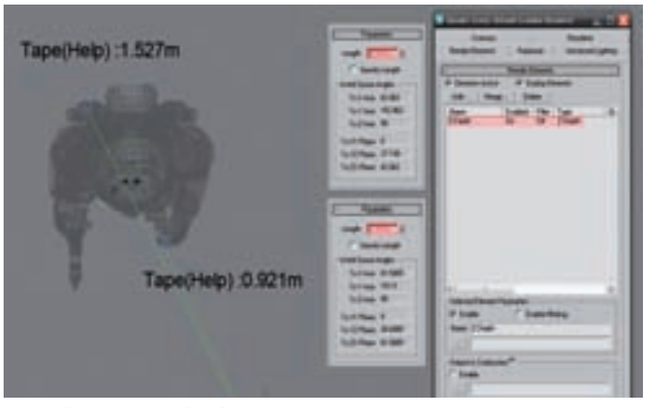
Using three point lights

To show up details on the robot, you need to use a number of Spot Lights. These provide highlights on the reflective material and give it a shiny appearance. The image is also lit by Global Illumination. When it comes to rendering, a number of passes need to be made. These include Z-Depth, shade, diffuse, a Shadow Map and Ambient Occlusion. Once all the passes are ready, they can be composited together in Adobe Photoshop.

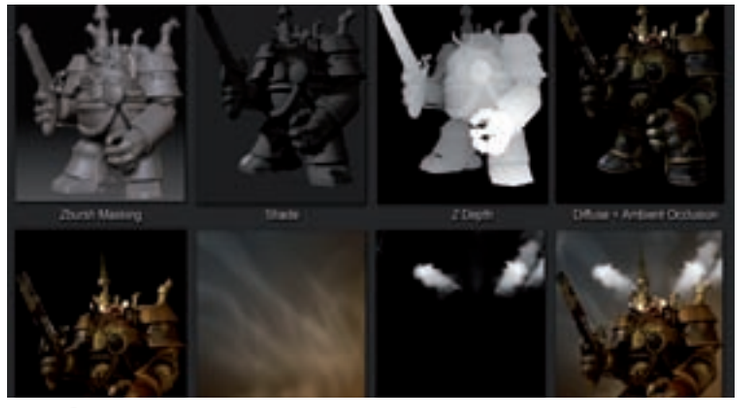
12 We have gone over making a Normal Map from ZBrush, so we can use this to make a Diffuse Map from a Normal Map channel (R, G, B) info. Open the Normal Map file in Photoshop and you can see the channel on the layer. Copy the red channel from Normal Map, then paste it to the layer, changing the method from Normal to Spotlight (80%), and invert the image. Follow the screenshot for the rest.



13 For the lighting setup, three Point Lights were used, and then Brazil Light was added for Global Illumination. Turn on the main light and the back light Shadow Map, plus turn on Adaptive in the Area Light Options box. The Luma Server is key to setting the lighting; it only uses Direct Illumination, which allows it to use illumination for Point Lights, Area Lights and Sky Lights.



14 Prepare each of the render elements for the composite. First, apply the default material to the object, which removes all the texture info from the object, then change the render setup for the scan line. Click on the Render Elements tab and enable Z-Depth. Change the value by copying the setup in the screenshot (get the near distance and far distance by Tape Helper).



15 Once you get all the elements that you want, start the composite with each of them. Base them on the Diffuse Map, add Ambient Occlusion and use Photoshop's Lens Blur to make a distance setup. After that, you need change the colour for matching background colours. In addition, add a Shadow channel layer set to Multiply, and an FX mask needs to be added on the top of the screen.

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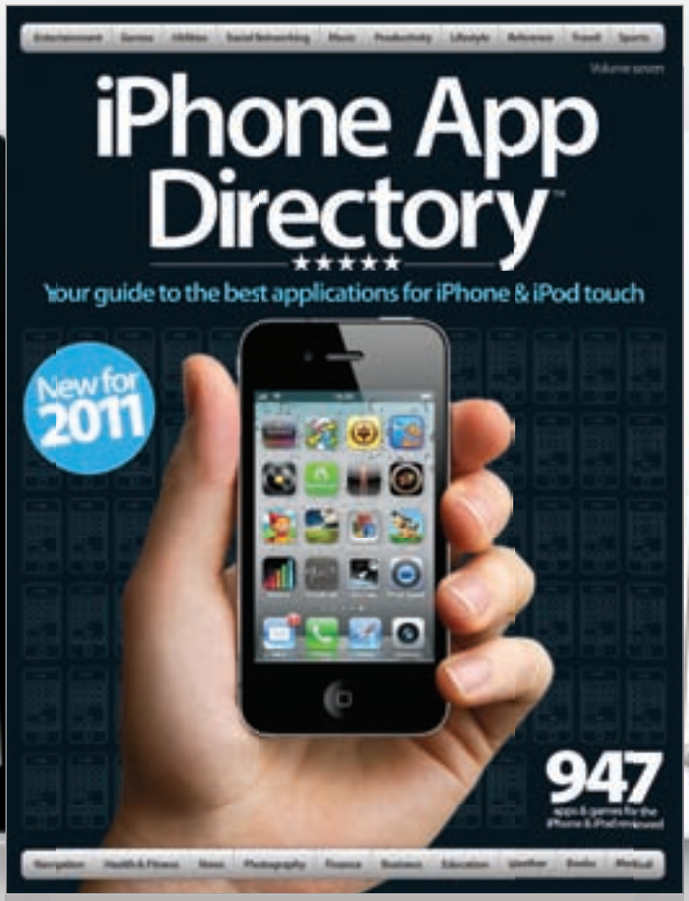
It's a jungle out there. Swing through it

iPad



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Automotive
Lance Hitchings
www.hitchingsdesign.com

Lance is happy to answer your questions on anything to do with rendered cars or Maya in general. Here, he explains how to composite a car into a real scene

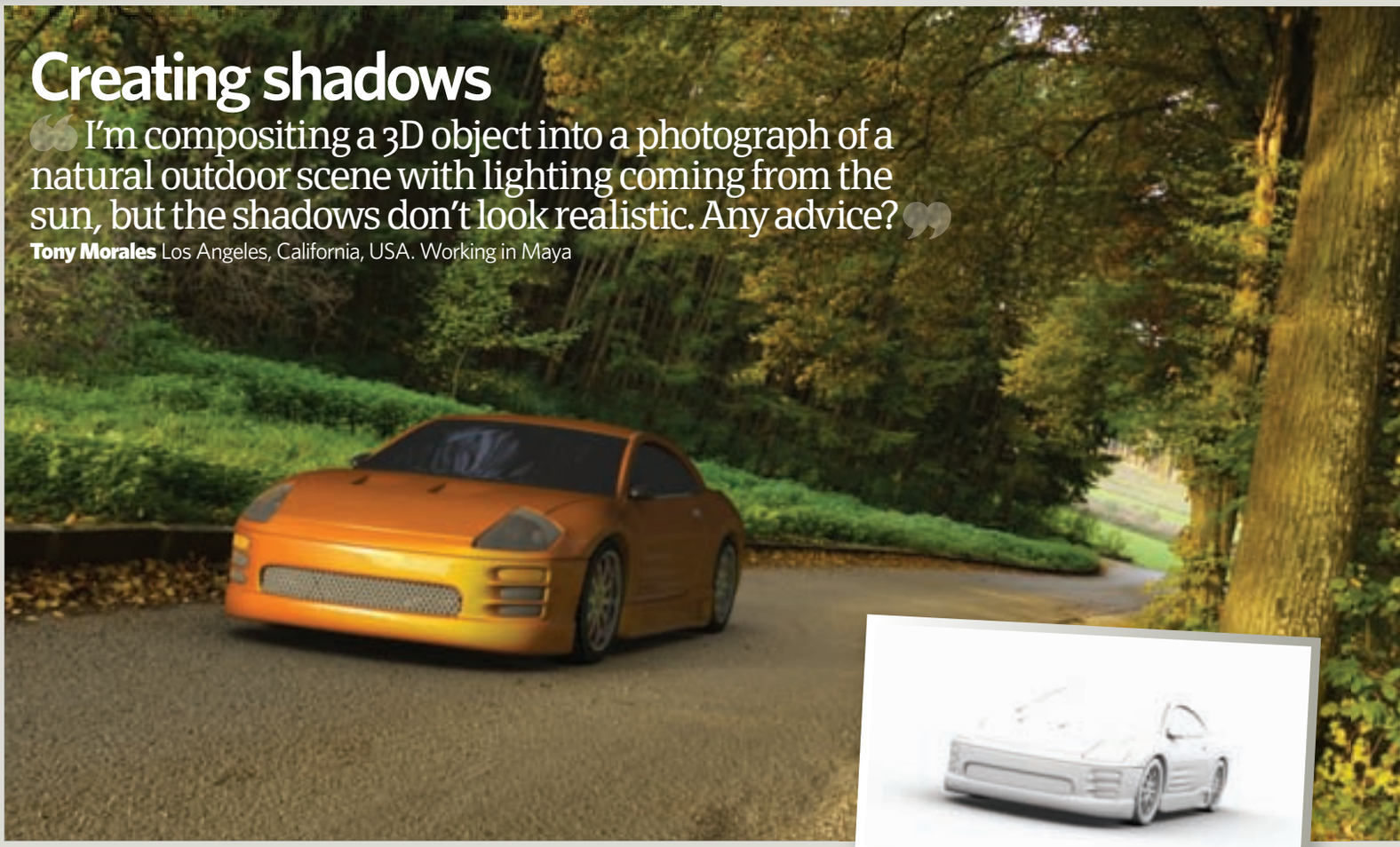
Game design
John Haynes
zugok@sbcglobal.net

John works on characters for games at EA in California so he knows about detailing low-poly models. Here, he describes how to come up with realistic hair for a game character

Creating shadows

"I'm compositing a 3D object into a photograph of a natural outdoor scene with lighting coming from the sun, but the shadows don't look realistic. Any advice?"

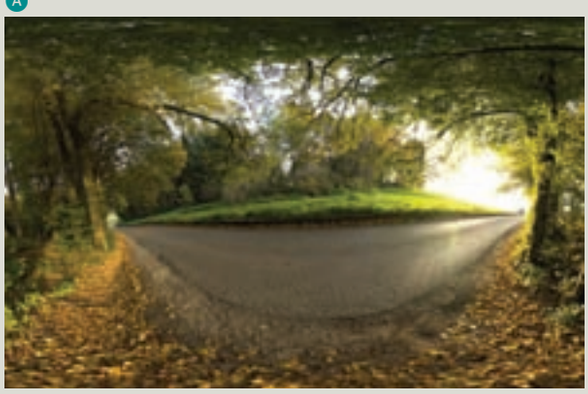
Tony Morales Los Angeles, California, USA. Working in Maya



When compositing a render of a 3D object into any photograph, your goal is to replicate the composition and the lighting. In order to do either, you need to start out with as much data about the photograph as you can. For your composition, you will need to know the distance of the camera from the focal point of the photograph on all three axes, how far above, in front and to the side, as well as details on the focal length, f-stop, shutter speed as well as film speed.

For lighting, you need to replicate the direct light, the ambient light and the reflections. The Physical Sun node creates realistic sunlight and shadows; the IBL (Image Based Lighting) node provides some of the reflections and creates realistic ambient light (we'll also use an Ambient Occlusion render to provide more ambient shadows), whereas the ground reflection plane creates the rest of the reflections.

A



01 Start with the right resources

You're going to need the following resources: the photo you want to composite into, a panoramic HDR image of the same (or similar) scene and a photo of the ground the model will be sitting on A. In place of the HDR image, you could use several photos stitched together for a

B

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growing community at www.3dartistonline.com

Characters
Lee Davies
http://leemale.cgsociety.org/

Lee works as a graphics artist and is an expert at creating figures. In his spare time he creates celebrity caricatures, but he'd be delighted to answer your character-based Maya questions

Your guide
Duncan Evans
www.3dartistonline.com

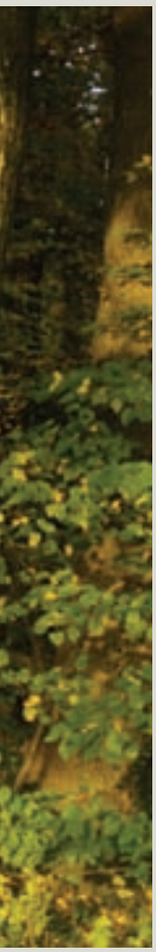
Duncan is your first point of call if you're suffering from a 3D niggle. As editor of the magazine, he can arrange to have your problems sorted out by talented and professional artists

Share your woes

Send us your 3D glitches and we'll get them sorted. There are two methods to get in touch with our team of expert advisors...

Email the team directly with your problem
3dartist@imagine-publishing.co.uk

Post your worry on the Q&A section on our forum
www.3dartistonline.com/forum



C

F

D

E

G

panorama B. These photos should ideally be taken at the same time as the primary photo. Otherwise, something can be cobbled together from stock images.

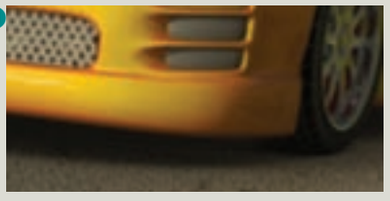
02 Set up your scene

Load your primary photo as an image plane in your render camera, and compose the scene to match the photo C. In Render Globals under the Environment tab, create an IBL node and map your HDR image to that. Also create a Physical Sun and Sky node, but in the Attribute Editor for your render camera, break the connection for the Physical Sky in the Environment Shader slot. This will allow the renderer to use the IBL node for the sky instead of the Physical Sky. Set the Sun Direction attributes to match the location of the sun in the primary photo. Set up a plane under your object to capture shadows cast by the sun, then map the ground image to a shallow disc or a plane under the object to use for reflections of the ground.

03 Rendering

You'll need three renders: your primary beauty shot D, shadow render E and an Ambient Occlusion render.

Hide the shadow plane for the beauty shot. For the shadow render, set the primary visibility of your 3D object to Off F in the Render Stats tab of the Attribute Editor. That way you'll get just the plane with the shadows. Create a new render layer with the 3D object and the shadow plane and choose the Ambient Occlusion preset. Render this layer for the Ambient Occlusion render.



H

04 Composite the renders

In Photoshop, the primary photo is the bottom layer, then the shadows layer G, the beauty shot and finally the Occlusion render. Use the mask from the beauty shot to break the Occlusion render into two layers (the object and the shadows). The final step is to add a slight amount of noise and blue to match the primary image H.

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3DArtist Your questions answered

Have a question about the software you use? Thwarted by creative block? Contact us and we'll help you get back in your 3D groove

This is the head mesh showing all the hair poly layers. The more polys used in the hair for curves will make it look better. SubD smoothing is also a good way to get smooth, flowing curves

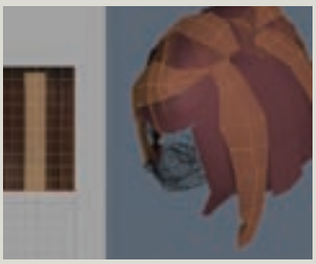
This is the head with all textures and various shaders applied. Use an Ambient Occlusion map and Translucency or Subsurface Scattering to add more shading realism to the surfaces. Ambient Occlusion maps are critical for good surfacing, and help add depth to surface shading

Hair today

"I'm creating a female character for a 3D game so it's polygons and textures rather than hair or particle systems. What's the best way of designing this with a modern hairstyle that looks good?"

Suzie Spencer Glasgow, UK

01 **Make sure the** character has a bare skull or has some extra volume to represent a hairstyle that has a bit more volume from the head. The volume should only extend as far as the hairline. Using a hair texture along with Bump or Normal Maps to colour the cap will help to fill in gaps between the hair poly strips.



02 **Create a poly** strip that's long enough for the longest part of the hair. Make sure its UVs are laid out evenly, vertical and not diagonal. Starting at the front, proceed towards the back along the side, leaving enough room on top for a second row along the hair part. Add thin strips to represent loose strands.

03 **Get a photo** reference of hair that's straight and even in texture. The pixel density of the texture needs to be high across the hair grain or width of the poly strip, and can be very low with the grain or along the length of the poly strip. Create a jagged alpha edge at each strand edge at the top and bottom.

The best way to get good results is to use a hairstyle that is shorter and above shoulder length. The polygon strips that represent hair clusters are placed near the top surface of the head, not connected or penetrating the surface, and originating near a parting in the hair. By using multiple overlapping rows of polygon strips, the depth of the hair can then be simulated. An alpha representing the end of the hair is placed at both ends of the strip to hide the polygon edges.

The hair texture is straight and tiling and can even be stretched along the length of the poly strip. The polygons are used to introduce the wave-like curve and flow to the hair. Keeping the hair texture tiling across the width of a poly strip allows the texture resolution to be increased if it looks too blurry or soft. Start with a light-coloured hair to see the hair texture more clearly for adjustment. Using an advanced shader for specular and Translucency will help put the finishing touch to the hair and help bring out the colour and sheen.

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Eastern promise

“How can I model and sculpt a stylised character with a hint of manga without it being unduly Far Eastern in looks?”

Thomas Meindorfer Frankfurt, Germany. Working in Maya and ZBrush

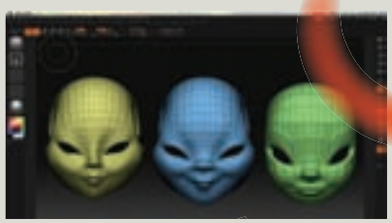
I am often asked whether my characters are inspired by the Japanese style, but I usually try to avoid consciously adopting any approach that doesn't feel like my own. My work may occasionally share a similar theme (such as a sexy android), but my methods have evolved over time and stem from a range of influences. The subject matter of a piece of work will usually inform its overall appearance in some way in terms of style.

If manga inspires you, collect a library of reference images and material. Identify the defining characteristics that appeal to you most and consider how to interpret them in a way appropriate to your natural style. Typically, Japanese characters have exaggerated physical features. Consider how these attributes can be used to emphasise age, gender or how you might accentuate a particular theme using costume or props.

If you really want to avoid cliché territory, try focusing on just one or two of these characteristics and look for inspiration beyond a single art style. Over time, this will help allow you to develop your own sense of design, which will in turn prove to be more rewarding in the long run than simply 'adopting' manga.

Design

When designing the look of your character, think about the universe it will inhabit and keep your designs appropriate to that place. Will your character be from the past or the future? Gothic, fantasy, sci-fi, human or alien? Cute, sexy or any combination of these? While it is always recommendable to rough out designs on paper in the early stages of a project, I find that working with ZBrush allows me to sketch ideas in 3D very quickly and efficiently, based on a few base meshes (heads, bodies, etc) to use as starting points.

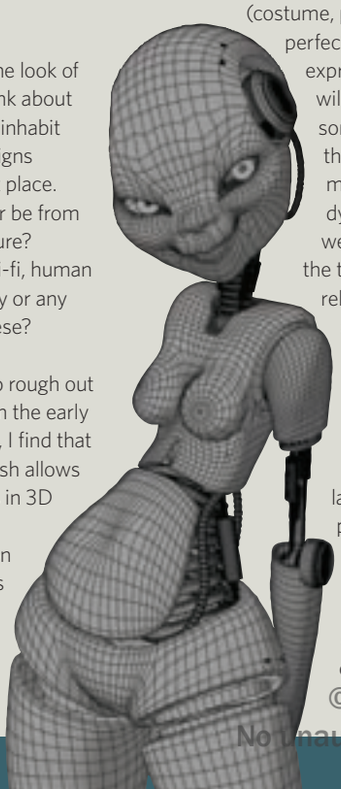


Details

Using some of the basic brushes (standard, move, etc), pulling a mesh around can be fast and intuitive. Facial features can be easily manipulated to achieve a wide range of looks. Try experimenting with the size and relative position of features using a low subdivision model until you achieve your required look. Female characters are typically defined by softer forms and rounded curves, whereas a stylised male character may contain more exaggerated angular forms (ZBrush's Flatten brush can be the perfect tool for this sort of thing). Small noise bump on top of the normal map will add detail, while mild fall-off in the colour slot accentuates the bump.

Attitude

Once you're happy with a basic model and have added any appropriate accessories (costume, props, etc), spend time perfecting your character's facial expression and pose. These factors will be vital in communicating the sort of personality and attitude that you might expect from a manga character, for example. A dynamic pose will help lend weight to a heroic character in the thick of action, while a more relaxed posture could suggest any range of subtle emotions. With a little practice, ZBrush's transpose features are great for posing a character quickly without the need for laborious rigging and skinning, perfect for one-off illustration purposes. However, be certain to retain a default posed version in case you ever decide to revisit the character for any reason.



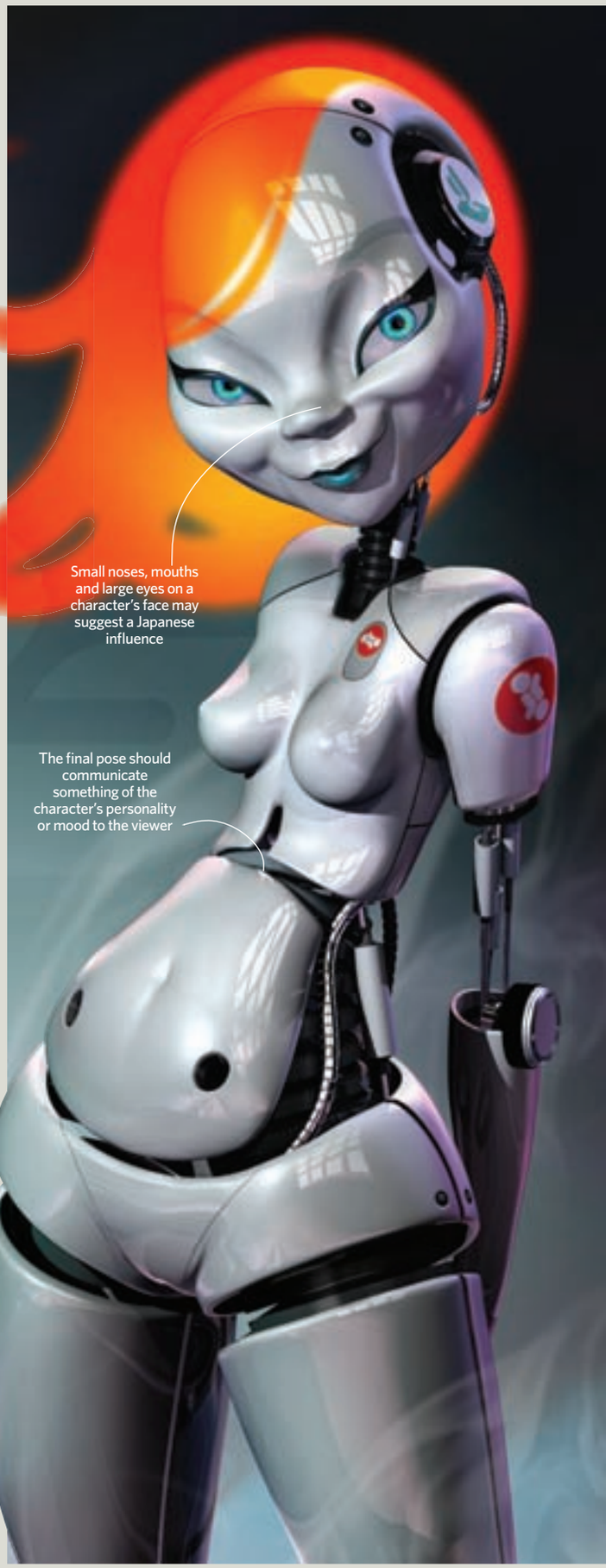

Small noses, mouths and large eyes on a character's face may suggest a Japanese influence
The final pose should communicate something of the character's personality or mood to the viewer

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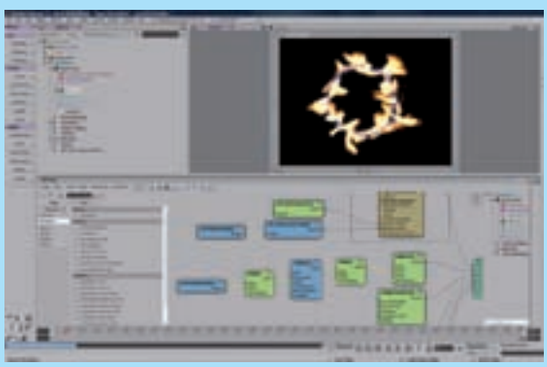
Image courtesy of UVPHACTORY

Strong composition and tracking features are a hallmark of the Softimage 3D package

Softimage 7.5 $2995

Softimage 7.5 is the most recent addition to the Autodesk stable, but where does it fit into a world increasingly dominated by Max and Maya?

At the end of last year, Autodesk completed its buyout of Softimage|XSI from Avid Technology. This means one company now owns the vast majority of the high-end 3D graphics market. Houdini, LightWave and CINEMA 4D are the only big players left outside the Autodesk empire.



The ICE system provides a flowchart view, allowing an exceptional level of control, particularly over particle systems

Autodesk Softimage 7.5 is the first version of the software to be released since the buyout – so apart from the replacement of 'XSI' with 'Autodesk', what exactly has changed?

Softimage was one of the earliest 3D packages to be adopted for television and film. Since then, it's lost some of that ground to Max and Maya, but along the way its strong character animation and modelling tools have gained it acceptance in the games market.

The package has always traded off its interface, which remains clean and uncluttered – something it manages primarily by making keyboard shortcuts absolutely central to getting to grips with the package. Its workflow is forgiving, with every object storing a complete list of the actions performed on it in a non-destructive stack.

Softimage has always put character animation centre-stage. You are able to create biped and quadruped rigs with a single click, and there are even generic characters provided as primitives. Skinning and rigging are very fast, while animating is intuitive.

Uniquely in 3D applications, Softimage also comes with a built-in 2D compositor. Softimage Illusion allows you to bring in your rendered animation along with all its render passes, combine it with other still and video elements, add colour correction and other effects and render out a finished movie. Illusion isn't After Effects by any means, but it does avoid constantly switching packages and workflows and reconstructing complex sequences when all you really want to do is put your 3D objects into a short video.

Aside from this, Softimage covers all the basics for a 3D package, including decent subdivision surfaces tools, very strong particle and hair systems, non-linear animation and dynamics, all of which have kept up with Maya and Max pretty well over the past few years.

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Softimage continues to make character animation a key part of its toolset

The good & the bad

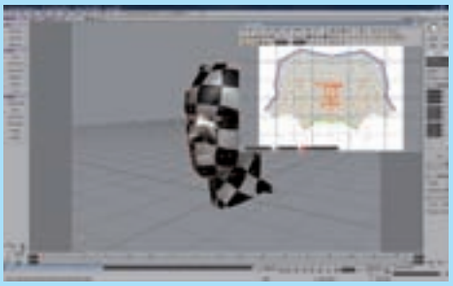
- ✓ ICE (node-based development tool)
- ✓ Strong character animation
- ✓ mental ray 3.7 support
- ✗ Not a huge update
- ✗ Expensive

Essential info

www.softimage.com
• $2995

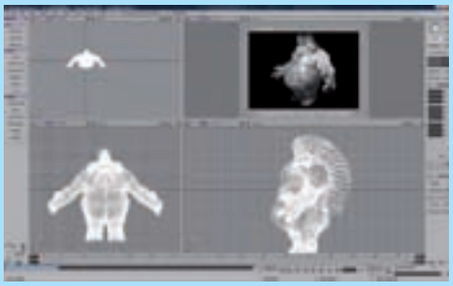
OPTIMAL SYSTEM REQUIREMENTS (PC)
• Windows XP/Vista
Optimal system requirements
Quad core processor
2GB RAM (4GB for 64-bit operating systems)

> Uniquely in 3D applications, Softimage comes with a built-in 2D compositor



Keeping it simple with the brand new tools

The new Texture tools allow you to unwrap the UVs of a complex mesh by simply selecting seams



Advanced options for hair and fur rendering

Softimage offers users an advanced Hair and Fur Rendering toolset

Create your own instant generic primitives

You can even create instant rigged human characters as primitives

Version 7 was a big update, introducing ICE (an advanced node-based toolset, initially set up for controlling particles) as well as upgrading materials and lighting and colour rendering. Version 7.5 isn't huge by comparison. There are a couple of tweaks and new features, but by and large, nothing groundbreaking.

The brand new UV Unwrapping tool allows you to take complex objects and texture them much more easily than before. Simply by picking a seam, the object can be automatically unfolded to create a UV map that not only gives even and unstretched textures, but also makes enough visual sense to allow you to draw onto them in a 2D paint package. It's a good system, which has already been adopted by many 3D packages. It's a little overdue in Softimage, but will be welcome nonetheless.

Users' hopes that the popular ICE system would expand to cover other aspects of the package haven't materialised, although there have been a few tweaks to ICE, mainly to fix inconsistencies and ease workflow.

mental ray 3.7 is now fully integrated with Softimage (version 7 included mental ray 3.6). The new version includes irradiance particles, which are a new alternative to Final Gather that saves render time by prioritising lighting effects based on their importance from the point of view of the camera.

So what does this release tell us about the way Softimage is heading under its new ownership? Well, it looks as though Softimage's character animation system will eventually be integrated into Max, but this doesn't mean Softimage is being wound down. Autodesk has already shown with Maya and Max that it's not looking to merge all 3D applications into one. Instead, Softimage will probably continue to concentrate on what it's good at – and that means particles and dynamics, fast modelling tools and strong character animation.

Our verdict

Features	8/10
Ease of use	7/10
Quality of results	9/10
Value for money	7/10

> Softimage is certainly worth considering as a 3D application, but the upgrade from 7 to 7.5 won't be a vital one for most artists

Final Score 7/10

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The Hair Library contains a number of styles and also types of hair. The older types can't be modified by the Hair engine, but the new strand-based ones can
Hair parts can be grouped together so that alterations are made to all of them at once, or individual clumps can be targeted
The Growth controls affect hair length and how much variation there is between strands for a more natural result. There are also controls for moving and pulling hair into new shapes
Here's the really clever stuff that allows you to tweak the hair dynamics to the conditions of the image you're compositing it into – including how damp the air is!
Clicking on the Plus sign let's you add additional content to the Library

Poser Pro $499

Take everyone's favourite pre-rigged character rendering and animation system, and pump it full of industry standards. Duncan Evans checks the results

Poser has had something of a potted history, going through various hands before ending up with current developer Smith Micro, which has made a concerted effort to update and upgrade the package. The result is Poser Pro now supports a range of advanced techniques, such as subsurface scattering, ambient occlusion, HDRI lighting, data exchange with COLLADA, network rendering and no fewer than three types of clothing simulation.

However, installation is the first task at hand, which goes smoothly up until the point that you realise the Poser 6 and 7 legacy content that comes with Pro doesn't physically come with it after all. You have to download it from the Smith Micro site, which, as it comes in at around 1GB for the zip files, is a fair amount of time to invest. Once downloaded and unzipped, the content needs to be installed to the Library, but again this has to be done manually – there is no automatic installer.

The standard interface of Poser Pro defaults to using one of the clothed figures, which you may not want. So this can be deleted and someone from the standard or legacy libraries loaded instead. The key point here is that the standard clothed figures have the clothing locked to them – there's nothing underneath. You can change the colour of the clothing but not much else. To get creative, you need the conforming cloth or the cloth dynamic system.

The options across the top of the main screen offer post, material, face, hair, cloth and the technical options of setup. There's also a tab for content that provides an in-program web browser for the Poser content site. The starting point, though, is either the default figure or to go to the Library, click on Figures and select one from there. If the figure is naked you'll need to add clothes, but some clothing works with some characters and some works with others. Basically, if you stick to the clothing types from each version of Poser, you'll be okay. If something doesn't work then it can be deleted.

Once ready, you can pull, twist and manipulate the figure, or load a supplied pose from the Library. Even with Limits turned on, it's still all too easy to twist the figures into unnatural shapes. This should have been addressed by now to make it possible to stick to physiological limits, but it's still a fast and easy way to set up a figure.

The Material tab is where you get down and dirty with your image and really change how it looks. This is where SSS, ambient occlusion, IBL for lights, atmosphere, advanced shadows and bump maps can be added. It's the use of bump maps that can make a big difference, as age lines and wrinkles can be created. If you want to avoid the same kind of skin texture each time, this is the section that needs your attention.

The other problem with Poser models is they have the same physical characteristics as renders from anyone else using the

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> Cloth dynamics give all kinds of realistic pulls and tugs

Here's one I rendered earlier. The default three-point lighting system is easy to arrange to give shadow and colour to the image

The good & the bad

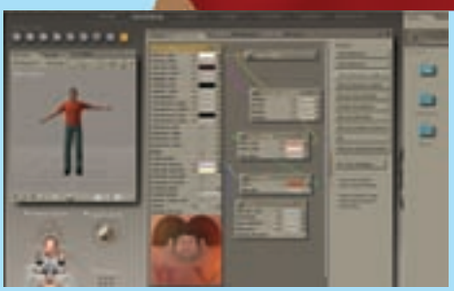
- ✓ Plenty of pre-rigged characters to use
- ✓ Advanced texturing technologies
- ✓ Poser people exportable to 3ds Max, Maya, CINEMA 4D
- ✓ 64-bit rendering engine
- ✗ Legacy content in messy download and install
- ✗ Characters still deform in unnatural positions
- ✗ Default skin textures need work

Essential info

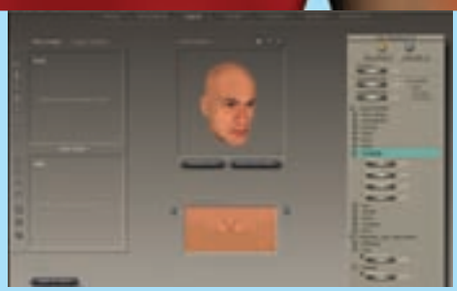
www.smithmicro.com
$499

OPTIMAL SYSTEM REQUIREMENTS (MAC)
- Mac Intel or Power Macintosh 700MHz (1.6GHz or faster recommended)
- Mac OS X 10.3.9 or above
- 1GB RAM min (2GB recommended)
- OpenGL-compatible graphics card with at least 128MB RAM
- 600MB free hard drive space for installation

OPTIMAL SYSTEM REQUIREMENTS (PC)
- Pentium III processor 700MHz (1.6GHz or faster recommended)
- Windows 2000 (Service Pack 2), Windows XP, Windows Vista
- 1GB RAM min (2GB recommended)
- OpenGL-compatible graphics card with at least 128MB RAM
- 600MB free hard drive space for installation



Material tab
The Material tab is where you can really change the feel of a render by tweaking the skin textures. Not only can the colours be modified, but advanced techniques like subsurface scattering can be used



Face modelling
While it isn't ZBrush, it is fairly easy to change most aspects of the standard models supplied by drag and drop actions on points on the face or by tweaking sliders for individual elements

Hair system
The new hair system allows for lots of fine adjustments to the strand-based hair pieces. The older types of hair can't be changed with this, but here the hair can almost be combed

program. Enter the Face department. While this isn't quite ZBrush, it does allow dragging and manipulation of the face, and each element has a slider adjustment to change the appearance. There are even general ones for ethnicity, age and gender, though these can't be pushed too far before they become grotesque caricatures. The clever thing is that your own front and side view photos can be loaded and wrapped to the model.

Hair is another system that has a lot of flexibility when using actual hair sets rather than hair-flavoured skull caps. The length and style can be adjusted and tweaked to get a unique look. However, it's the cloth system that really stands out. As mentioned, there are three types: fixed clothing, conforming clothing that fits to the shape of the subject, no matter the position (although it's limited to being used on the character type it was designed for), and finally, dynamic clothing. This is the new and exciting system, which creates a 30-frame spread of images. The initial position of the cloth fabric is created on frame 1, then dynamic simulation is applied leading to the end frame. This gives all kinds of realistic ripples and pulls. If you want a still image, you render the final frame, otherwise carry on and animate with more frames.

There's no doubt Poser Pro has come a long way, and in recent years has had a lot of new functionality added, but the downside is there are too many systems at work. It all needs cleaning up into a more coherent way of working, with supplied content being configured to that system. The other problem is the default rendering options don't give ideal results, so you need to get into the textures and technical aspects to come up with more realistic results. But the point is it can be done, and the basic system saves a lot of time in the process.

Our verdict

Features	8/10
Ease of use	8/10
Quality of results	7/10
Value for money	7/10

> Great features, plenty of advanced technologies, but it does feel a bit messy at times

Final Score 7/10

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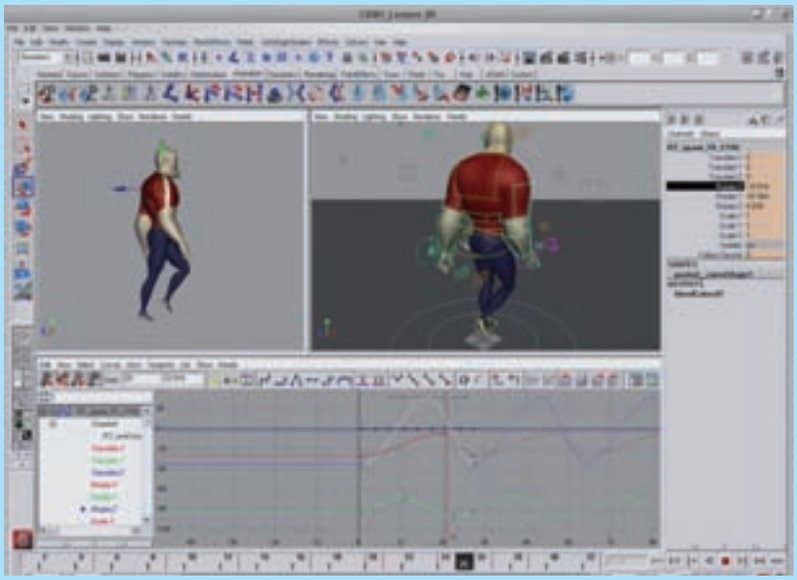
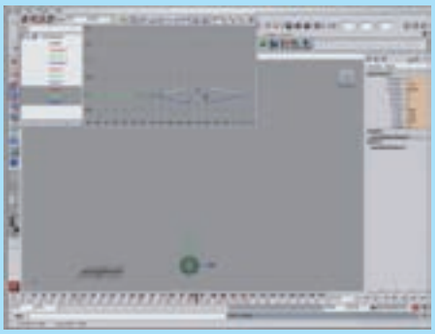
Gnomon Character Animation: Fundamentals $49

Part one of a three-disc set from The Gnomon Workshop, with the others looking at lip-syncing and acting as well as mechanics and emotion



The tutorial on the bouncing ball will be familiar ground to most aspiring animators



Nowadays, video tutorials are ten a penny. The software to create them is freely available, and since YouTube it's pretty hard to tell whether what you're about to watch is actually an intelligent professional production or a simplistic half-hearted attempt.

Gnomon's tutorials are a cut above the rest, however, and this one is professionally produced and informative. The sound is clear, Chris Kirshbaum's delivery is confident, and although staring at a mouse pointer for half an hour while someone describes the best way to avoid popping knees is never going to make for a riveting cinematic spectacle, this is an animator who knows what he's doing and is comfortable explaining it. He manages to speak in considerable detail and show you how to solve practical problems without getting bogged down in the minutiae of which buttons to press.

The tutorials are professionally produced as well as informative

As for the content, this is part one of a three-disc set, and it covers two animation jobs. The first, a bouncing ball, gets the viewer used to the Maya interface and particularly the Curves editor. The second, a walk cycle, is a much more involved and subtle piece of animation, covering topics like style, characterisation and personality, and showing you how to achieve these using Maya's tools.

Most users, if they have any interest in character animation at all, will already know how to animate a bouncing ball before they buy the tutorial. However, the first lessons do provide a useful introduction to the presenter's methods.

The walk cycle tutorial, spread over six 20/30-minute lessons, will be of use to most animators. It's full of really practical tips in both the creative and the technical aspects of animation. Whether you're working in Maya or in another package, you should get something from this tutorial.

At $49 the cost isn't huge, and if you're going to be doing a lot of character animation, the whole day that it'll take you to thoroughly work through these nine lessons will probably save you far more in terms of time, money and frustration in the long term.

Essential info

www.thegnomonworkshop.com
- **DVD or download**

OPTIMAL SYSTEMS
- Any

OPTIMAL SYSTEM REQUIREMENTS
- If you can play a DVD or a MOV file, then you will be able to play this!

> "This tutorial is professionally produced and informative"

Our verdict

Features	**7/10**
Ease of use	**8/10**
Quality of results	**8/10**
Value for money	**8/10**

> "A well-presented tutorial with technical and creative instruction well balanced"

Final Score 8/10

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Genetica Viewer Free

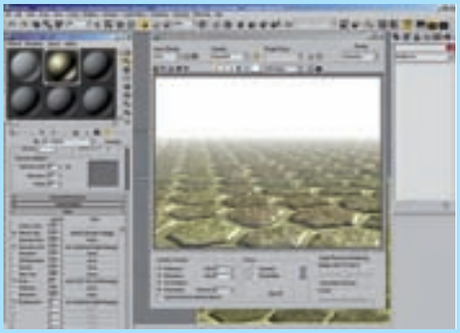
A worthwhile freebie with the option of going for more

The Genetica Viewer is a free package allowing you to load in libraries of tile-able textures created in Genetica's own gtx format, mess with them in a whole range of ways and then export them as JPEGs for use in whatever 3D application you favour.

The point of this is that Genetica's textures aren't just photos. They're a series of masks, scalable drawings and procedural maps that combine to produce the texture – and crucially, you have control over how that combination works and what parts of it you output.

In other words, a stone floor image may be made up of stone and mortar colour, and bump maps, stone shape maps, dirt maps and a range of other effects mattes. So you can export whichever you like at whatever resolution you like, and import them into your 3D app to turn into an extremely controllable material. You can use the stone shape as a bump map, use the dirt maps to control shine, etc. What's more, because the images are tile-able, you can add almost infinite detail.

So, why is it free? Well, in the end, it's about getting you to buy the software for designing textures yourself in one of its three versions ranging from $149 to $899. But what's on offer free is well worthwhile, whether or not you go for the full package.



Genetica Viewer allows you to export the various maps used in a texture separately, so you can construct materials from them in your 3D application

The Viewer package is a bit clunky but perfectly usable. There are a good range of controls (you can adjust the hue, contrast, scale, etc of your texture). You can also export the full image or each map separately, depending on how you plan to use them.

An impressive range of textures are bundled with the Viewer. These cover all the usual brickwork, metals and architectural textures, as well as some more specialised textures like medieval buildings, landscapes, liquids and even whole planets.

There's a tendency for scalable textures to look a bit too clean, but these, used with care, can create impressively realistic effects. What's more, each texture can, with a little knowledge of your own 3D app's shaders, produce a whole range of materials.

www.spiralgraphics.biz

Our verdict

Features	7/10
Ease of use	6/10
Quality of results	8/10
Value for money	10/10

> "It may be a little slow, but is a useful addition to any 3D modeller's toolkit"

Final Score 7/10

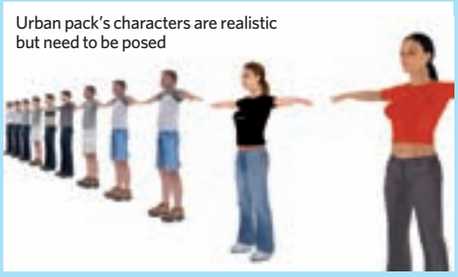
Xtrusion Urban pack 3 $150

Solve your empty space problems with a bunch of characters

Scattering a few low polygon people around can turn a dull flythrough or a lifeless street scene into a dynamic and believable environment.

But modelling humans is a time-consuming process, and if you're primarily interested in the scene itself, it's distracting. A selection of bought-in, pre-textured characters can be the answer, so we took a look at three different instant crowds available through turbosquid.

Urban pack 3 from Xtrusion ($150) includes four characters in casual clothes. Each is around 3,500 faces, includes a 1,024 pixel texture map, and is a single mesh in a standard reference pose. These are useful characters, if a little similar to one another, and are surprisingly realistic, but you do need to skin and pose them yourself.



Urban pack's characters are realistic but need to be posed

Alternatively, at $120, Picture Factory's Archipeople offers a slightly less realistic set of characters (three women and three men), but provides each one ready to use in four standing, walking and sitting poses, with five different colour schemes.

Geometricks' 12 humans pack retails at just $99 and provides 12 very distinct figures. Geometricks' characters are provided in fairly neutral modern dress, and come in at around 2,500 polys with a single texture for each character. They're not pre-posed, but you don't have to add bones to them either – each figure comes as a hierarchy of linked limbs, so you can simply rotate them to pose the character. Because they're only designed for use at a distance, this rather robotic form of posing works fine and allows you to use each character in any way you like.

Overall, Urban pack provides the most realistic characters we looked at – the scores are for this package. Archipeople offers the most instantly usable figures, and Geometricks offers the most flexible set of models.

www.turbosquid.com

Our verdict

Features	7/10
Ease of use	7/10
Quality of results	8/10
Value for money	6/10

> "These are useful characters, if a little similar to one another, and are surprisingly realistic, but you do need to skin them"

Final Score 7/10

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VISUAL STORYTELLING
A lot of the important information in the book is presented in memorable, easily read storyboards

Directing the Story £22.99

Learn how to create effective plots and storyboards for your 3D animations

So you've got the 3D skills to make an animation happen. Confident in your modelling abilities, you assemble your rushes and set out to impress prospective employers – only to be rebuffed when the way you've presented your plot doesn't make the final cut.

Storylining is sometimes ignored when you're learning 3D animation, as there is so much in the technical field for you to master that it naturally takes a back seat. Even if you're approaching 3D animation from the most technical perspectives, however, the ability to present a good story in a way that will grab your audience's attention is a key skill. It doesn't matter how pretty your rendering is if those who are watching it can't follow the action effectively. This is where *Directing the Story* comes in. It is a creative guide to the art of creating the storyboards used to plan and drive your movie, and it takes in much that can be left out of purely technical courses of study.

The book itself is presented in something of an author's conceit: the tale of *The Arabian Nights*, which to Disney story artist and Gnomon Workshop tutor Francis Glebas is the paragon of storytelling, is woven throughout the book in many of its examples. It's full of these, providing some great guidelines to getting it exactly right.

But the storyboards aren't just used to show you how it should be done. Glebas provides examples of audience reactions in the same format as he takes you through the basics of reception aesthetics – understanding how your work makes the viewer react – and much more. You'll learn how to make the viewer's eye go where you want it to on the screen, how to use well-known storyline motifs (the building blocks of plots) to convey and enhance meaning as well as the visual short cuts to demonstrate them efficiently and effectively.

The final aim of this book is, of course, to help you create clear, workable storylines full of impact and put them in the right format to sell them or get a job in the industry. But even if three-dimensional animation is your hobby and this isn't your aim, *Directing the Story* is a fascinating book full of useful information about producing great storylines, and it should definitely find a place on all animators' bookshelves.

info

AUTHOR
● Francis Glebas

PRICE
● £22.99 / $39.95US

PUBLISHER
● Focal Press

ISBN NUMBER
● 978-0-240-8107-8

AUDIENCE REACTIONS
This set of storyboards documents the audience's reaction to a plot, showing the various impacts that visual storytelling has on the viewer

CRITICAL ANALYSIS
The book encourages readers to constructively critique methods of storytelling in order to implement it effectively and efficiently

PLOT DEVICES
A key element of *Directing the Story* is the examination of classic plot devices, which are called motifs, and how the audience understands them

EVEN MORE CRITICAL ANALYSIS
The book ends with a critique of itself, demonstrating the concept of linked story arcs – the book itself and the tale from the storyboards throughout

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Digital Modelling for Urban Design

The theories behind urban planning with a touch of 3D icing £27.99

Architecture and urban planning have been revolutionised by 3D design just as much as animation. *Digital Modelling for Urban Design* may sound like a technical manual on the subject, but this is another book that aims to accompany technical know-how with insights into cultural theory. In this book, however, complex subjects are surrounded by academic jargon.

Despite claiming to be a synthesis of modelling techniques and the theory behind them, this reads like a pretentious dissertation on the semiotics of architecture, and there is little focus on the practical application of 3D modelling to this industry. This book is not for newcomers to urban planning and certainly not for would-be 3D designers – it's a trendy mix of cultural theory with the slightest dash of digital design, which looks clever but isn't spectacularly relevant.

CULTURAL THEORY AND URBAN DESIGN
This book's mere nod to 3D comes in the form of these boxy little abstract models accompanying high-flying theoretical text

TRADITIONAL ARCHITECTURE
Much of this book is, in fact, made up of traditional theories of architecture and not must-have 3D skills

ABSTRACT PHILOSOPHY
A few gritty urban photos and Zen muses are included to ensure that owning this book impresses your girlfriend

info
AUTHOR
● Brian McGrath
PRICE
● £27.99
PUBLISHER
● Wiley
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● 978-0-470-03478-1

Learning Autodesk Maya 2009 £45.00

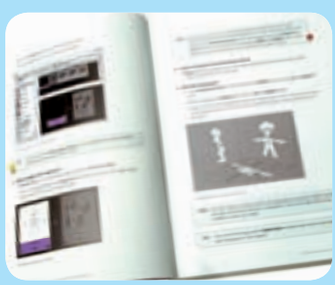
Does exactly what it says on the tin

Finally to a technical tome with some real benefits for 3D modellers of all kinds. Autodesk's Maya software is one of the industry leaders in the field, and the one program with which most 3D artists are expected to display some proficiency. That's the aim of *Learning Autodesk Maya 2009*, and that is what it delivers.

It may not have a clever cultural hook like the others reviewed in this issue of 3D Artist, but it does have a logical, practical progression through learning the latest iteration of Maya. You'll need a minimum amount of fluency with the software before embarking on the tutorials in this book, which are designed to teach you your way around the program and what you can do with it, as well as enabling you to produce tangible results.

For those learning Maya or wanting a refresher as they invest in the latest version of the software, *Learning Autodesk Maya 2009* is nothing short of an essential investment.

BACK TO BASICS
This book starts simply, with polygons and basic meshes, which is ideal for Maya and 3D design beginners



BODY MODELLING
This subject – bearing in mind that it is the aim of most 3D modellers – is covered early on in order to give you an overview right from the very beginning

TECHNICAL TRICKS
As you progress through *Learning Autodesk Maya 2009*, you'll move into learning and understanding more complex modelling technologies within Maya

info
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● Marc-Andre Guindon
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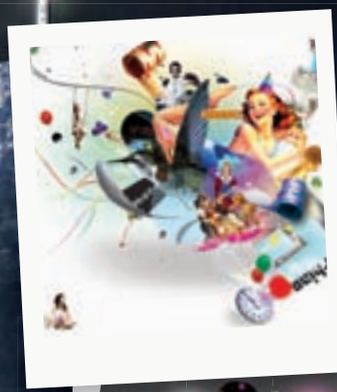

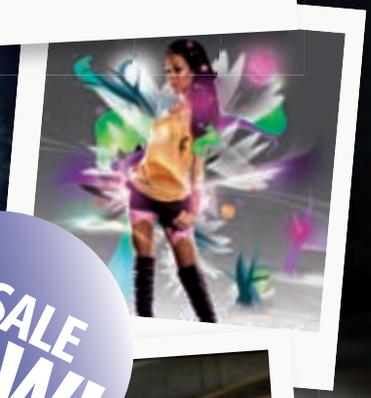

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Inside guide to industry news, studios, expert opinion and education

100 Insider interview

Carlos Fueyo

Each issue we ask an industry pro how you can get a job like theirs. This time it's Carlos Fueyo from Insomnia3d, a Miami architectural visualisation company

094 News

Industry news

All the latest news and events, shows, products and updates in the world of 3D

096 Behind the scenes

Escape Studios

Want to get some learning and then a job with the major players in CGI and VFX? Then you need to go to a place like Escape Studios. We find out what it has to offer the aspiring 3D artist

inside

103 Uni Focus

Swansea

Swansea Metropolitan University has an animation course that aims to teach you the fundamentals of getting things to jump up and down on-screen. Julie Easton checks it out

Afonso Salcedo, now working at Pixar, acknowledges what Escape Studios did for him. **Page 96**

> “Escape's animation course gave me the intensive hands-on approach I needed”

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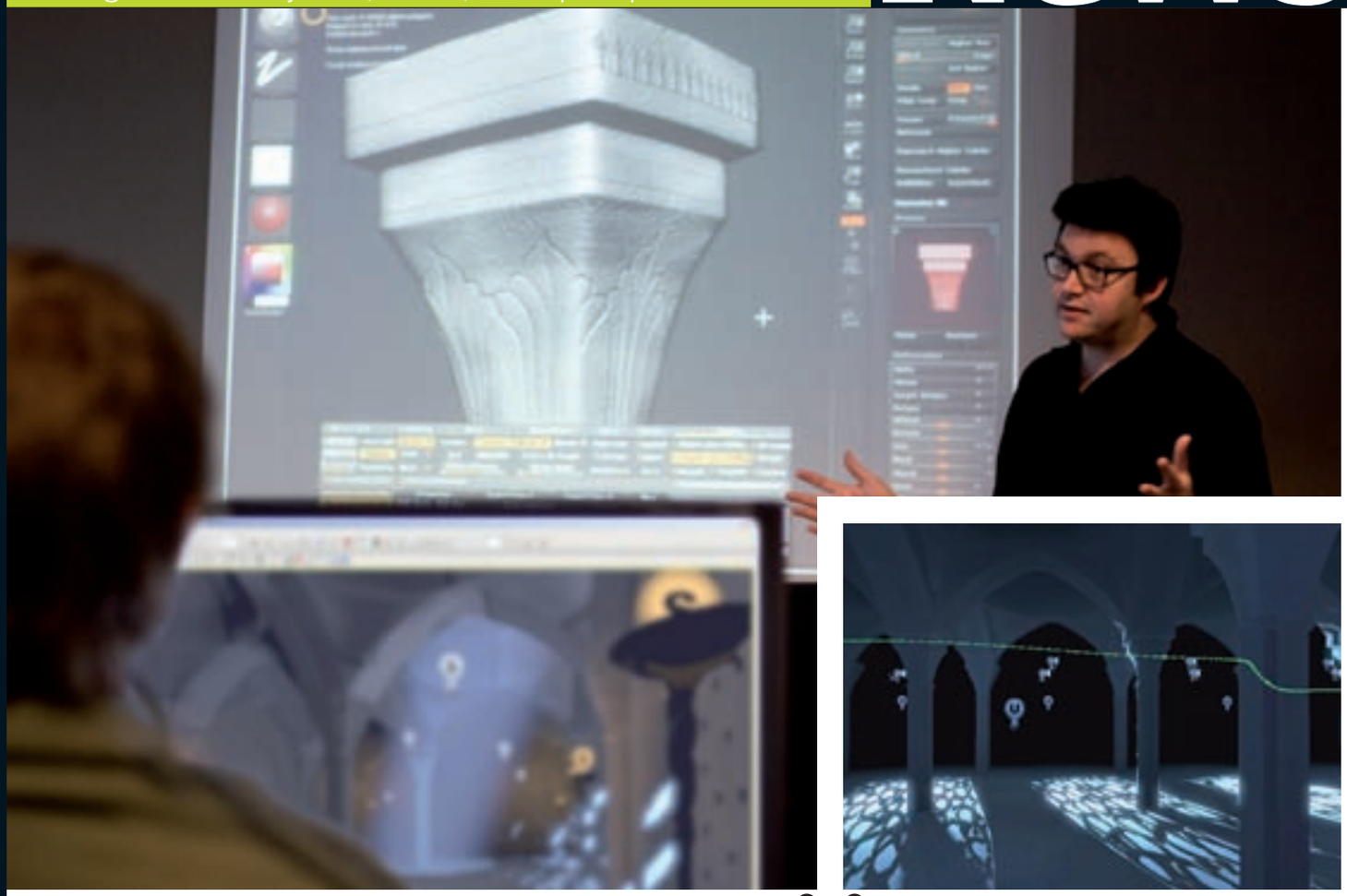

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Escape Studios offers new games course

Students to learn essential skills for finding jobs in the industry

Escape Studios has introduced a new course aimed at those wishing to find a job in the games industry. The new classroom-based course will look at how to create realistic models and environments for games, and is being taught by Simon Fenton, former lead artist at Sony Computer Entertainment London.

The course will cover software including Maya, Photoshop, ZBrush, CrazyBump and the Unreal engine, and lasts 12 weeks. At the end of the programme, students will be better equipped with the skills needed to find a job in the games industry and will come away with a personal demo reel of work completed.

The course kicks off on 30 March and will run full-time from 10am to 5pm at Escape's London headquarters until 28 September.

"Escape's goal is to focus on teaching the skills our students need to be successful in real production environments," says Simon Fenton, the course instructor. "Junior games artists don't write code or design levels, which is why we focus on teaching students on how to model, texture and light according to a brief. We also give them a sound grounding in artistic principles and an understanding of the technical limitations a games artist has to work under on a daily basis."

"This is the perfect course for students interested in learning the fundamental skills required to pursue and secure a job in the games industry," says Paul Wilkes, recruitment director of Escape. "Escape's games course helps students compile their work onto a demo reel, and our recruitment team helps them tailor that reel for specific job applications."

The course costs £8,500, no prior knowledge of the applications is needed but a basic understanding of 3D and Photoshop is recommended. Visit www.escapestudios.com/en_GB/training/courses-main/games.html for more information.

A Simon Fenton, formerly of Sony Computer Entertainment London, is going to be teaching the new games course at Escape

B The course will cover the essential skills of lighting, texture mapping and modelling over 12 weeks

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Elliot Animation benefits with Craft Camera Tools

The production facility uses the technology on its *Rollbots* animation series

Elliot Animation, a Toronto-based production facility, has dramatically increased the complexity of its latest animated series without breaking the budget through the use of Craft Camera Tools for Gamecaster's virtual camera control system, GCS3.

The software and hardware bundle was developed by Craft Animations AB and Gamecaster, and is being put through its paces for a new children's animated series called *Rollbots*. *Rollbots* is a new 3D animated children's series from Amberwood Entertainment, and has recently premiered in Canada.

Craft Camera Tools for GCS3 eliminates traditional keyframing methods of virtual cameras in 3D animated scenes, enabling complex camera movements much faster than before. Instead, the system enables users to work with animated scenes in the same way that they would shoot live action, looking through the camera viewfinder and panning, tilting and zooming in real-time with the same controls as a real camera. "We estimate that completing these complex shots traditionally would have added an additional $600,000 in costs to the production," says George Elliott, president of Elliott Animation (www.elliottanimation.com).

Craft Camera Tools works with Gamecaster's GCS3 virtual camera control hardware, coming together as an intuitive and superior bundle. The reduced costs involved means that there is more room for experimentation and development in productions. Product information and pricing can be found at www.craftanimations.com and www.gamecaster.com.

C

D

> "We estimate that completing these complex shots traditionally would have added an additional $600,000 in costs"

C *Rollbots* is a new 3D animation children's series soon to air in the US. *Rollbots* makes the most of complex camera movements without breaking the bank using the latest technology

D The Elliot Animation team were able to experiment more in production using the Craft Camera Tools for GCS3 bundle pack

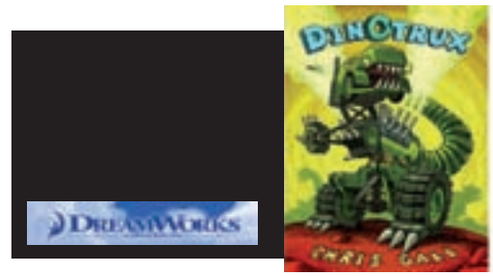
Substance Air in final stage of beta

Allegorithmic's texturing middleware solution for better productivity

Allegorithmic has announced that its Substance Air technology is entering its final stage of beta and is due to launch this month. The texturing middleware is designed for the development and distribution of online games, reducing the size of downloadable applications and providing a better solution for advanced user-generated content.

Key features of Substance Air include the ability to generate detailed graphics that fit in a small file size, unique user-generated content features, a brand new runtime engine, a flexible authoring tool and a complete range of training and support solutions.

To find out more about the software, visit www.allegorithmic.com.



DreamWorks buys rights to *Dinotrux*

Yet-to-be-published children's book to become CG film

DreamWorks Animation has optioned rights to an upcoming children's book called *Dinotrux*.

The 32-page book, written by Chris Gall, is set in a fictional prehistoric age where the world is ruled by part-truck, part-dinosaur creatures. The deal was reportedly for a mid-six-figure sum to enable the studio to create a CG-animated film with title characters as talking creatures. The *Dinotrux* characters come from a range of species, including Craneosauraus, Garbageadon as well as Tyrannosaurus Trux.

Chris Gall is a commercial illustrator and *Dinotrux* will be his fourth title, due out in June.

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Studio Access

Escape Studios

Where can you train in 3D in the classroom and online? **April Madden** looks at the great Escape

esc
escapestudios.com

Escape Studios is a hotbed of industry specialists training a new generation of designers

www.escapestudios.com

Function of studio The studio specialises in Maya, ZBrush, RenderMan and 3ds Max, as well as vocational 3D courses

Country UK

In the classroom, Escape Studios can be as high octane as the effects its tutors create for the movie, TV and videogame industries. Each lecturer still freelances in their specialist field, giving students the benefit of their first-hand experience on big projects like *The Dark Knight* and *The Da Vinci Code*. It's not just vicarious storytelling, either, as students even get the opportunity to work with their mentor on some of the biggest names in movies and gaming after they've completed their chosen course. In just a few weeks – sometimes days – Escape Studios aims to transform the student from amateur to pro, and it recognises that the best way to do that is to put them on the cutting edge of 3D design, with all the pleasures and perils the industry entails.

Full-time classroom courses range from two days to 12 weeks in duration, and by the end of that time Escape Studios aims to have set the student's feet on the path of the professional. Classes are small, boasting a strictly regulated population of just 12 students apiece. In this small-scale environment, there are plenty of opportunities for collaborative projects, and crucially, the tutor has time to devote attention to each student. The opportunity to work with Escape Studios' team on such an intimate level is sure to do wonders for a student's design prowess.

But don't think you can walk in there with no knowledge at all and come out as 3D's answer to Orson Welles. Students are pushed hard at Escape Studios, as animation tutor Jeff Pratt says: "Anyone who wants to get into animation needs to have a wide variety of skills. They should have an in-depth knowledge of the principles of animation, be a good actor and storyteller, able to communicate visually (ie able to draw), have an understanding of anatomy and know the software inside out."

While these are the skills Escape Studios aims to hone in your time there, you'll need more than the cash for tuition

A

B

Key people

Jeff Pratt
Course speciality: Animation

Lee Danskin
Course speciality Visual Effects

Nick Savy
Course speciality Characters

Famous Escapees

Escape Studios has trained many people who've gone on to work on household names. Afonso Salcedo trained in animation and is now a lighting director at Pixar – his most recent project was Cars. Nicole Gabriel of EA is now a world artist, creating the environments for market-leading videogames, and credits the industry links and experience she built up at Escape Studios for giving her the opportunity. Phil Radford trained in Maya and now creates graphics for BBC News. Meanwhile, recent students Pilar Seijo and Nick van Diem show how students can produce flawlessly professional work in just 12 weeks.

A Pilar Seijo produced this Donnie Darko style visualisation after he completed the 12-week Character course

B Also trained on the Character course, Nick van Diem created this Doom-laden monster

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C Many students work together on pet projects after completing their course at Escape

Tutor profiles

Jeff Pratt

Jeff studied Mechanical Engineering and spent eight years at NASA as a shuttle systems engineer in Kennedy Space Center before going into animation. Since then he's worked on Pixar's first five movies. He was an animator on *Toy Story* and its sequel, also *A Bug's Life* and *Monsters Inc*, and was a modeller on *Finding Nemo*. Since leaving Pixar he's taught animation, at Expression College in San Francisco, and now at Escape Studios.

Lee Danskin

Lee's 3D career began as a developer on Maya, and he's now rightly recognised as a Maya Master. His first feature was the remake of *Lost in Space*, and he then went on to work on the James Bond flick *The World Is Not Enough* as well as *The Da Vinci Code* and *X-Men: The Last Stand*. He also worked on award-winning commercials for Volkswagen, Guinness and BMW before joining Escape Studios in 2006.

Nick Savy

Nick originally specialised in audio, working as a sound engineer in the Eighties. Working with games developers at Sega, Psygnosis and Sony as a musician and game artist, he made the jump to 2D and later 3D graphics and started designing. Now a leading CG character designer in games and movies, his most recent credits include *Batman Begins* and *Harry Potter And The Chamber of Secrets*. He now teaches the full-time Character course at Escape Studios.

Simon Fenton

Trained in Fine Art, Simon started his career in game design at Bits Studios and started working with CG. After ten years at Sony – where he worked on characters, environments and animation on nine titles, including *Total NBA 97, The Getaway: Black Monday, Kinetic* and *Kinetic Combat* – he freelanced for a while, creating virtual interiors for museums. He then joined Escape Studios, where he now heads up the Games course, teaching students everything they need to know about the world of videogame design.

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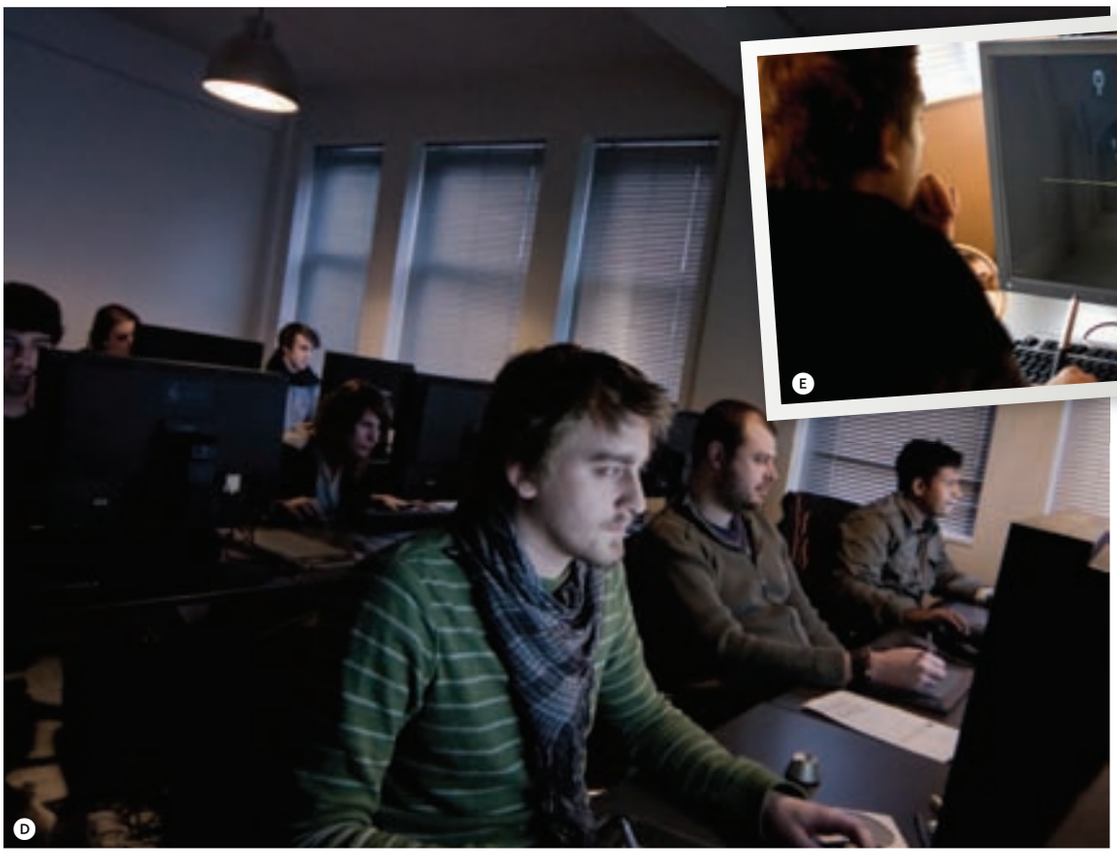
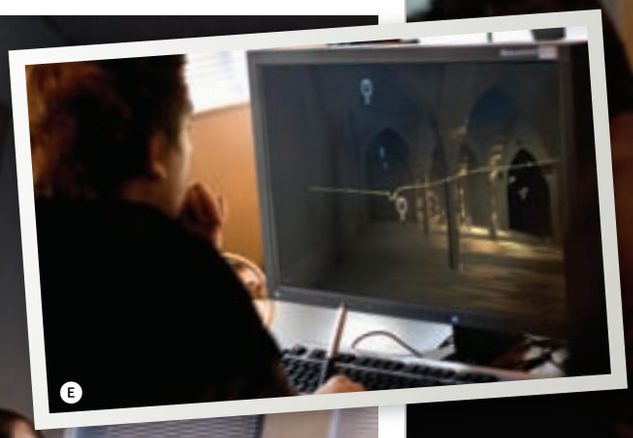
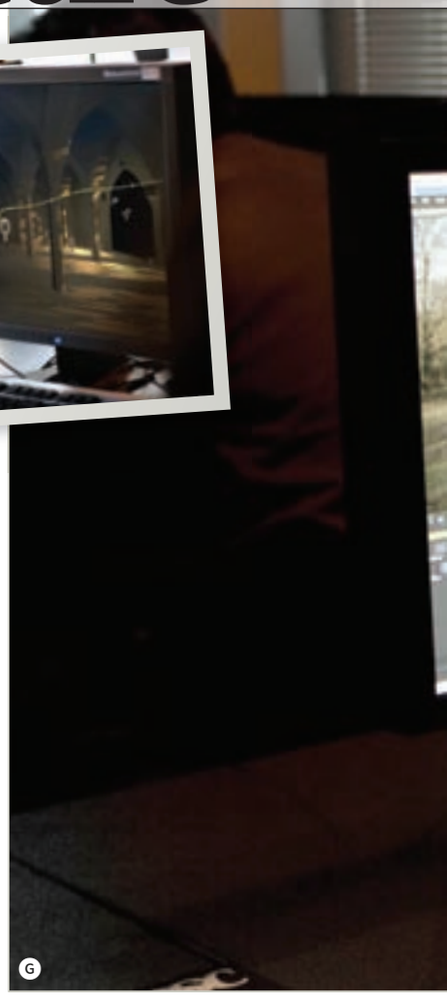






> Escape's Animation course gave me the intensive hands-on approach I needed

and a bucketful of enthusiasm to get into one of the nine classes housed in the heady environment of Escape Studios' Shepherd's Bush campus. As Lee Danskin, Escape Studios' training development director and Visual Effects course tutor, states: "It's vital to have an open mind and passion for your work. A grounding in traditional media is an advantage, and a good knowledge of photography is particularly useful for people wanting to get into visual effects. Basic computer literacy and image-manipulation skills are always beneficial for any student."

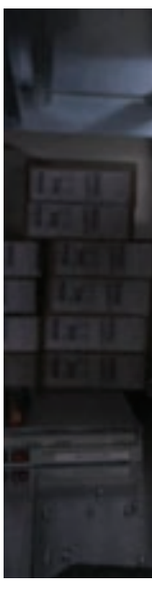
So before you choose to take on one of the studio's courses, a little revision is in order. Courses range from the general specialities of Animation and Visual Effects to Character Creation, Games Design and Compositing, and there are specialist programmes in Maya, RenderMan, ZBrush and V-Ray. Some of these can be taken over a few days, such as V-Ray and the week-long RenderMan Fundamentals programme. Others, like Maya and ZBrush, can be taken as evening classes. The rest are a full-time 12-week commitment to gaining enough knowledge, expertise and experience to get a junior job in the industry.

For the industry

Escape Studios' industry links are strong, with tutors having worked on a lot of big-name, big-budget games and films. Most courses are based on realistic expectations of what you need to know and do to work your way up in the industry. So a Maya Core course specifically for use as video tutorials (with added online support) in design studios is available in addition to the full-time classroom courses and online tuition you can get from Escape Studios.

Doing it online

If you haven't got time for a full course, and the studio you work for doesn't plan to cough up the fees for the Maya Core course, you still won't miss out. You can also train online with Escape Studios, and while you



D Classroom students are taught in small groups of 12 to maximise the time they get with their course tutor

E Game Design is just one of the courses that are on offer from the wide range at Escape Studios

F An emphasis is placed on creating realistic, natural-looking effects in Escape Studios' Visual Effects course

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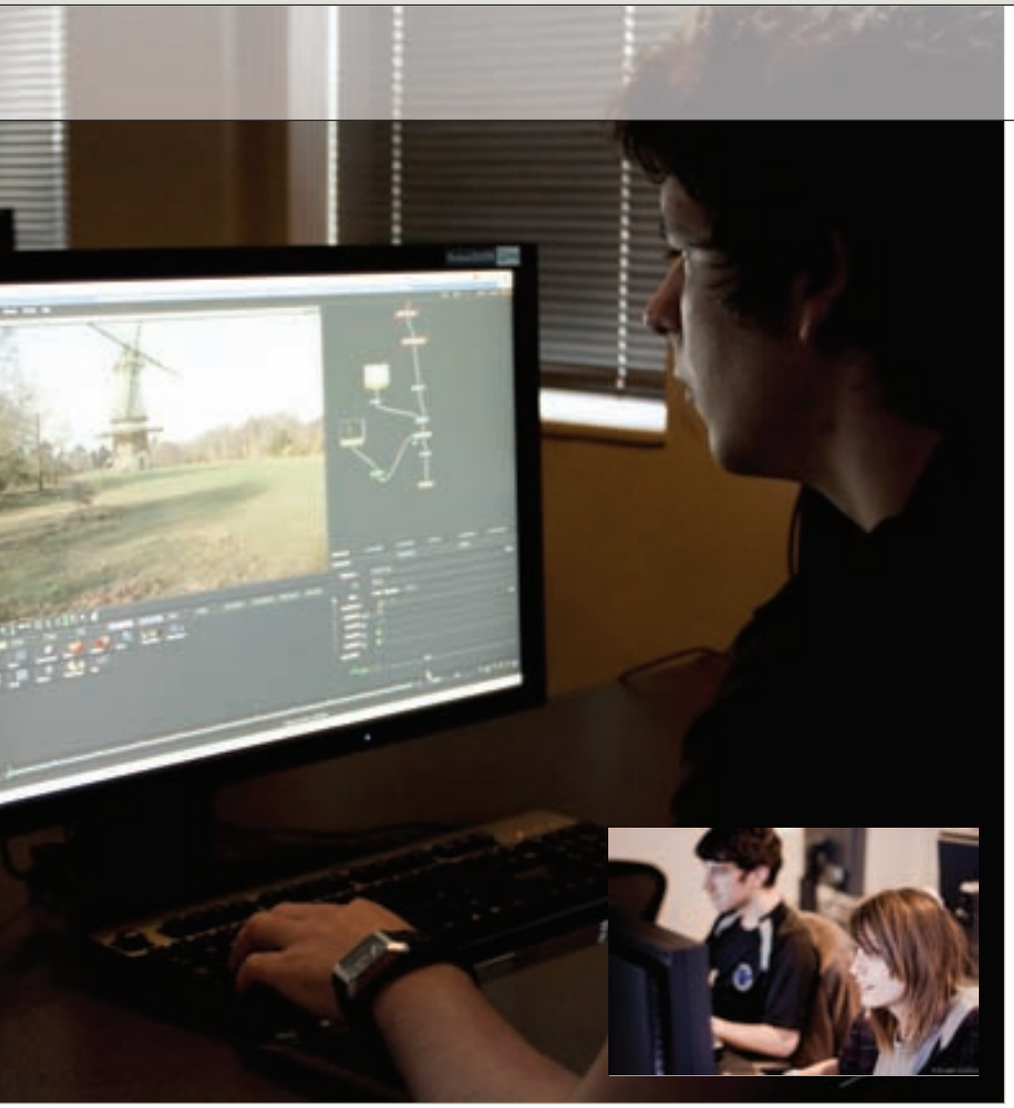

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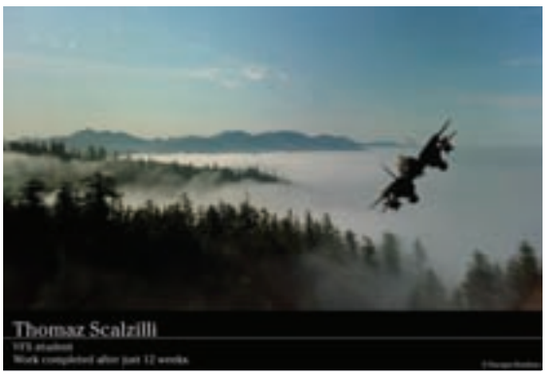
won't be able to cover the more sexy topics of Animation and CG Character creation straight away, these online courses provide the perfect foundation for those who want to move on to more demanding classroom tuition but don't yet have the necessary skills. All you need is a login, which you'll receive on payment of your tuition fee. These courses are considerably cheaper than the full-time and evening class equivalents, so they're a great way to see if Escape Studios' training is right for you (and you can even take a sneak peek at some of them on the website so you know what you'll be getting).

Unlike the intense environment of the classroom, the online courses give you the chance to learn at your own pace. The login for your course lasts for a year, so you can fit tuition around your work, choose how much you study in a given session, and when and where you study it. The courses are mainly software-specific, designed to enable you to achieve the skills you need to take on any of the full-time courses on offer at Escape Studios, or just bolster your



J

CV and improve your industry prospects. They include Camera Tracking for VFX, a ZBrush Foundation course, six standalone modules of the Maya Core program (or a bundle of the lot), Visualisation with 3ds Max and a RenderMan course based on Pixar's courseware for its industry-leading program. This is particularly relevant to Animation students: course leader Jeff Pratt worked on Pixar's first five feature films and maintains strong links with the industry-leading animation studio. Whether you're an industry veteran who needs an update or a young student hungry to learn all Escape Studios can give you, one or more of its online courses can make an ideal base for further study or professional development.

You're not going to be looking at YouTube-like levels of pixelation in video tutorials or have to set an ancient VCR for a weird-hour Open University programme. Course materials are supplied in lavish HD video so you can get up close and personal with the material. And these courses don't consist of just passively watching TV. You get access to a specialist tutor, and can email and message them with questions and ask for advice at any time. At Escape Studios, online courses are definitely not the poor relation of full-time classroom-based programmes of study. They build a great foundation for furthering your prospects in a range of 3D programs and skills.

Training for academics

It's not all about Escape Studios' in-house courses either – it recognises that other institutions can benefit from its expertise. A new wave of animation and game design courses have brought 3D into the more traditional avenues of academia, and many arts courses are now offering modules in computer-aided design. For this reason, the Maya Core courses that Escape Studios specialises in are also available to colleges and universities for tutors and lecturers. So whatever, wherever and however you learn it, Escape Studios is spreading the 3D love worldwide.

G Classroom courses are a mix of lectures and practical learning in the student's chosen subject

H Students can produce high-calibre 3D work across a range of disciplines after a course of just 12 weeks

J Courses cover animation, visual effects, games design, compositing and software-specific programs

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Industry insider

Carlos Fueyo

Insomnia3d Studio, Miami

Each issue, **3D Artist** finds out how the top people in the 3D industry got their jobs and what you need to know to get a foot in the door

About the insider

Job Project manager, Insomnia3d

Education Bachelors and Masters in Architecture

Company website www.insomnia3d.com

Biography Born and raised in Asturias, Spain, I moved to the US in 1996 in order to pursue an Architecture degree. I have always been involved in the arts, whether it is watercolours, photography, architecture or CG, and always strive to better my work.

Carlos Fueyo is the project manager at Insomnia3d, based in Miami, Florida. He describes himself as "wearing as many hats as the job requires."

3D Artist: *What kind of course did you do at university, and was that helpful in getting into the architectural visualisation industry?*
Carlos Fueyo: It all really started about 11 years ago when I was introduced to AutoCAD in architecture school. Soon after, I realised that I could use 3ds Max instead, and the love affair with CG began. From there I began to get jobs by word of mouth, and later Insomnia3d developed into a personal lab for animation and 3D art, which also provided its services to clients in many different areas.

3DA: *For today's generation of students, what is the kind of educational grounding they should be looking to undertake to get a first job in architectural visualisation or interior 3D design?*
CF: The most important thing is dedication. You really have to enjoy what you are doing, and I think that once you can achieve that then the rest will fall into place. If you encounter a problem or a challenge and that disposition is there, it does not matter how long it takes to surpass that challenge; eventually, you will do it.

Research has also played a huge part in my career. I still spend countless hours doing light and material studies and experiments, so that when the time to use it comes, I will be prepared.

A 3D visualisation of a Royal Caribbean Cruise Lines (RCCL) gallery made in 3ds Max

3DA: *How did Insomnia3d come about, how was the company set up and what was the objective?*
CF: The company was formed about five years ago in order to formalise the relationship with clients a bit. Some clients will always try to take advantage of a freelancer just because they think he/she will take anything and at any price. But the real reason was to establish Insomnia3d as an experimental studio that would research different techniques in order to re-create life as realistically as possible.

3DA: *What tools do you use at Insomnia3d?*
CF: The main software I use is 3ds Max, which has amazing capabilities and an endless array of tools and options. I am always trying to learn new software, whether it is a new rendering engine or a fluid simulator. I believe that staying up to date on new technologies and tools is a must in this industry.

3DA: *What are the key skills required to work in today's architecture visualisation and interior 3D design industry?*
CF: It is my opinion that not too many architects and designers understand the importance of visualisation and what it can do for them and their business. This translates to an industry that lacks a consistency in rates and quality. Many of us have had to deal with clients that, due to the lack of knowledge of the process involved in creating these images and animations, do not see it fit to properly compensate the work, which drives the freelancer to either lower the rates in order to receive the commission, or turn down the job and become part of that client's black list. This, I think, is driving the quality of the work down in some sectors of the industry and forcing talented artist to settle for less. So I am hoping that with a more educated client base and a joined professional community, all of the required skills will be talent, experience, knowledge and vision.

Within my output of the industry, attention to detail and the ability to use all the available tools to create groundbreaking images and animations are two of the most important skills. Also, the ability to change perspectives and points of view. I think it is

Portfolio highlights

Carlos Fueyo has worked on many projects to date, including the ones here

2009 The Miami River 1930
2008 Projects Woods – Elektroprivreda Building (Lebbeus Woods)
2008 Istanbul Resort
2008 High-Line Art Institute
2007 PS1 Design Proposal, New York

Istanbul Resort

Projects Woods

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> I've had the chance to work on some intensive animation work in the past year

Devivian Rear
This was a residence designed by Florida Architecture Firm, Bali Designs, in 2005. This is a perfect example of Arch Viz importance to the Architect. Since the Architect had an intimidate Visual feedback to this design, he was able to see what he liked and change what he did not by observing the future project from any angle desired.

ART + Habitat 3

Ⓐ PS1 MoMA holds a yearly competition to design the outdoor area of the remodeled school that it's now a museum for new contemporary artists. This was a quick model for a design based upon Bruce Nauman's work after studying some of his pieces.

essential to reinvent yourself and your work; after all, "the only constant is change" (Heraclitus).

3DA: *Do you think the major software packages have advanced as quickly and make life as easy as it could be for design work?*
CF: There has been an amazing advance in processing power and video card technologies. Every year we have a processor that is 20 per cent faster that its predecessor, and can calculate and render scenes faster than ever.

I think the software packages are trying to keep up but are not quite there yet, as I still see a lot of compatibility issues every time new hardware comes out. But I am not going to be a whiner and will admit that software packages have come a long way as well. A year ago, you would have to unwrap a spline or a sweep in order to properly texture it, when now UV splines make it a snap to create sweeps and spline-based geometry to which a texture map can be properly applied, even when modifying the base geometry. Other simple concepts, like proxies, light portals and an infinite number of others, are definitely making it possible for the artist to produce more, faster and better. In addition, you have a variety of plug-ins from companies like nPower, dRaster, and RandomControl (among many others) that continue to raise the bar, providing specialised tools that facilitate the artist's job.

3DA: *What would be your dream project to work on at Insomnia3d?*
CF: Well, my dream job for Insomnia3d would be a film, creating detailed designed environments that help tell a story. I've had the chance to work on some intensive animation work in the past year, and I can only hope that Insomnia3d continues to grow to the point where it could handle major motion picture work. But stepping out of the clouds, on a more realistic and near-future basis, I would love to work on a television ad. It would be an amazing opportunity to experiment with telling a story in such little time. I am currently working on an in-house project, which is intended to create a short animation (an automotive advert) that resembles the quality of a large studio project, minus the render farm and the staff. Hopefully, this will open the door for future projects of the sort.

> There has been an amazing advance in processing power and video card technologies

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The best course and freshest talent from universities around the globe…

Swansea Metropolitan University

BA (Hons) 3D Computer Animation

The 3D Computer Animation course at Swansea Metropolitan University runs at four different levels: BA (Hons), BSc (Hons), HND and MA. Graduates of the School of Digital Media have gone on to work for some high-profile clients, including Warner Bros, Aardman and EA Games, so it's no wonder that the course remains incredibly popular among undergraduates.

The BA (Hons) course covers a wide range of techniques and software, beginning with an introduction to design, modelling and rendering within 3D. Previous experience is not expected, so the very basics are taught in the first year of study, focusing on lighting and visual studies. The second year of the course moves on to character animation and the final year is project-based, as well as introducing the concepts of business, marketing and self-promotion in order to help students to find careers in the industry after graduation.

One of the key elements of the course is that it is orientated towards students who want to find jobs in the film industry. As such, it has close links with Swansea Animation Days (SAND), now an integral part of the programme calendar. This event hosts key animators and international speakers from well-known companies like DreamWorks, sharing insider knowledge on the industry. Promoted as a networking opportunity for graduates, it is essential for those pursuing a career in animation, modelling and texturing. In 2008, nearly 2,000 delegates from around the world made their way to the Welsh city for this event.

A

B

> "Having industry-led tutors with great background knowledge and experience has helped immensely with studying and on my final animated short"
>
> **James Spratling** third-year student

Past graduates have gone on to some very prestigious roles, including Jenni Eynon, who graduated in 2007 and was immediately snapped up by special-effects company Double Negative. One of her first post-production projects was *The Dark Knight*. In a SMU press release, Jenni explained how the course has helped her in her new role: "Although a lot of the work at Double Negative involves proprietary software and a lot of learning on the job, the skills I acquired at Swansea Met have been invaluable. The broad, generalist nature of the 3D Computer Animation course at Swansea Met helped prepare me for this role."

To find out more about the course and the university, take a visit to www.smu.ac.uk. For showreels of past students' work, you can see these at www.vimeo.com/smu/videos.

Course details

Tel +44 (0)1792 481010

Web www.smu.ac.uk

Duration Three years

Fees Full-time undergraduate programme at SMU for UK and EU students 2008/2009 = £3,070

ENTRY REQUIREMENTS

180 points from at least two six-unit awards or one 12-unit award, grade C or above in English/Welsh language at GCSE, together with passes at grade C or above in another four approved subjects OR BTEC National Diploma or Certificate in relevant academic subject OR Foundation Diploma, plus one A level or AVCE in a relevant academic subject OR appropriate Access course

A Caveman's Haircut
» **Jordan Davies**
Time taken: Six hours
MonkeyJam
This shows a clay model and a polystyrene cave. "After watching *Toy Story* for the first time, I fell in love with it and thought this is what I wanted to do when I grow up. I really would like to see my work broadcast around the world and enjoyed by the people who watch it."

B Dark Yoshi
» **Jordan Davies**
Time taken: Two weeks
Maya, Photoshop, Silo
Created by poly modelling and mental ray. "We use Maya mainly, which is new to me, but I've picked it up quickly and find it no problem to use. Every day I learn something new."

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C Façade
» **Timothy Bailey**
Time taken: 10 hours
Maya, Photoshop
"This model was created completely in Maya 2008 for my modelling assignment. Based on reference photos of a real building and modelled for an asset in a second-year SFX animation, it was rendered using mental ray with an Ambient Occlusion texture."

D

> We study films and the history of animation, audio and visual techniques and even some stop-motion animation

Jordan Davies second-year student

D Alpine Adventures – Children's Bedroom
» **James Spratling**
Time taken: Seven hours
Maya, Photoshop and Illustrator
"The scene was produced through Maya, the lighting was done using Global Illumination and it was rendered using mental ray. Kate Jones created the fabric designs in Illustrator."

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Global student galleries

Check out the 3D galleries of students from courses and universities all around the world

Welcome to the new Global student gallery section in 3D Artist where we take you around the world to see what is being created in the land of learning. Each issue we'll select the works of a few individuals who have produced interesting, exciting or just plain excellent work and showcase it here. Do you think your portfolio is good enough to appear in the Global gallery? Well, for a start you must be a student, whether that's full time, part time, by mail or online. All are equally valid. Also, if you graduated from a 3D graphics course within the last 12 months then that's great as well. In the first instance, get in touch with editor Duncan Evans (**duncan.evans@imagine-publishing.co.uk**), preferably with a link to your portfolio so he can have a quick look at your work. List your name, what university you went to and the course you did or are doing.

A

B

C

Artist info

Adrian Cristea

Personal portfolio site www.ady.cabanova.ro
University website www.spiruharet.ro
Country Romania
Software used 3ds Max, V-Ray, Photoshop, ZBrush

Adrian is 30 years old and graduated from the Spiru Haret University in 2008 where he specialised in Geography and Tourism.

A Papal Palace
» **Cory Neill**
Maya, Photoshop
"This scene was based on the Papal Palace in Viterbo, Italy. I added some damage to it as the building itself looks like it was meant for defensive measures. Water and various plant growth was included to make it become more connected with nature."

B Mickey Mouse
» **Adrian Cristea**
3ds Max, ZBrush, V-Ray, Photoshop
"The inspiration for this image was a Mickey Mouse toy I bought from a toy shop. This is my tribute to the figure."

C Interior bathroom
» **Adrian Cristea**
3ds Max, V-Ray, Photoshop
"This is a bathroom, which evolved from another earlier work, using different arrangements and colours."

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Artist info

Cory Neill

Personal portfolio site
http://cneill.cgsociety.org/gallery/

University website
www.bgsu.edu

Country USA

Software used Maya, ZBrush, Photoshop, After Effects

Cory recently graduated from Bowling Green State University with a Bachelor of Fine Arts in Digital Arts. His specialisation is in 3D environment modelling. Other interests include creating digital collages, animation, painting and drawing. Cory is inspired by Gothic architecture, Art Nouveau and motion graphics.

D Lincoln Cathedral
» **Cory Neill**
Maya, Photoshop
The reference for this image was the Lincoln Cathedral located in England. It is one of the many great pieces of Gothic architecture. I gave it a slightly dramatic mood by giving the camera a wide-angled effect low to the ground as well as creating strong shadows.

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